## SEQUENCE LISTING

```
<11.0> JAPAN TOBACCO INC.
```

Syngenta Limited

<120> The rice restorer gene to the rice BT type cytoplasmic male sterility.

<130> YCT811

<150> JP 2002-197560

<151> 2002-07-05

<160> 87

<210> 1

<211> 24

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification of R1877 EcoRI marker sequence.

<400> 1

cattcctgct tccatggaaa cgtc 24

<210> 2

<211> 33

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification of R1877 EcoRI marker

```
sequence.
<400> 2
ctctttctgt atacttgagc tttgacatct gac 33
<210>
<211>
       20
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification of G4003 HindIII marker
<223>
sequence.
<400> 3
gatcgacgag tacctgaacg
<210>
       4
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification of G4003 HindIII marker
<223>
sequence.
<400> 4
aatagttgga ttgtcctcaa aggg
<210>
       5
<211>
       27
<212>
       DNA
<213>
       artificial sequence
<220>
```

```
<223> Oligonucleotide primer for amplification of C1361 MwoI marker
sequence.
<400> 5
aaagcaaccg acticagtgg catcacc 27
<210> 6
<211> 24
<212> DNA
<213> artificial sequence
<220>
\langle 223 \rangle · Oligonucleotide primer for amplification of C1361 MwoI marker
sequence.
<400> 6
ctggactica titccctgca gage 24
<210> 7
<211> 27
<212> DNA
<213> artificial sequence
<220>
<223> Oligonucleotide primer for amplification of G2155 MwoI marker
sequence.
<400> 7
gaccaccaat taactgatta agctggc 27
<210> 8
<211> 27
<212> DNA
<213> artificial sequence
```

```
<220>
       Oligonucleotide primer for amplification of G2155 Mwol marker
<223>
sequence.
<400> 8
tttctggctc caataatcag ctgtagc 27
<210> 9`
<211> 27
<212> DNA
<213> artificial sequence
<220>
<223> Oligonucleotide primer for amplification of G291 MspI marker
sequence.
<400> 9
ctgctgcagc aagctgcacc gaaccgg 27
<210> 10
<211> 24
<212> DNA
<213> artificial sequence
<220>
<223> Oligonucleotide primer for amplification of G291 MspI marker
sequence.
<400> 10
acattititc itccgaaact iccg
<210> 11
<211> 24
<212> DNA
```

```
<213> artificial sequence
<220>
<223> Oligonucleotide primer for amplification of R2303 Bs11 marker
sequence.
<400> 11
atggaaagat acactagaat gagc 24
<210> 12
<211> 24
<212>
      DNA
<213>
      artificial sequence
<220>
      Oligonucleotide primer for amplification of R2303 BslI marker
<223>
sequence.
<400> 12
atcttatata giggcaggaa agcc 24
<210> 13
<211>
      24
<212> DNA
<213> artificial sequence
<220>
       Oligonucleotide primer for amplification of S10019 BstUI marker
<223>
sequence.
<400> 13
aacaatctta tcctgcacag actg
<210> 14
<211> 24
```

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification of S10019 BstUI marker sequence.

<400> 14

gtcacataga agcagatggg ttcc 24

<210> 15

<211> 24

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification of S10602 KpnI marker sequence.

**<400> 15** 

agetgttgag agttctatgc cacc 24

<210> 16

<211> 24

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification of S10602 KpnI marker sequence.

<400> 16

tagccatgca acaagatgtc atac 24

<210> 17

```
<211>
       26
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification of S12564 Tsp509I marker
<223>
sequence.
<400> 17
ctagttagac cgaataactg aggttc
<210>
       18
<211>
       27
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification of S12564 Tsp509I marker
<223>
sequence.
<400> 18
tttgtgggtt tgtggcattg agaaaat
                                27
<210>
       19
<211>
       2240
<212>
       DNA
<213> Oryza sativa L.
       PCR marker G4003 HindIII
<223>
<400>
       19
gcggccgctc cgggaagtcg agcgagtaga cgcccctgac gccgtacgcg tcggcgagcc
                                                                      60
\tt gcagcggcgt \ ctctggcggt \ gtgaaggaca \ gcccgttcag \ cgtcgcgcgg \ cgccgcccgt
                                                                     120
tgatcgtcac cggcgccgtg ctccgcagca ggtacgcctg cgtcacgttg atcgacgagt
                                                                     180
```

acctgaacga tccctgtggg ttcggcctcg ccgctccggc actcaggttc cacctgccca

240

atgcaaaaaa ccaaaaccca aaagcttaat gcgaataata catcattcca cgtatttaaa 300 aaaataattt ataggtaaaa tttttataat gtattttagc gacgtaaatg tcaatgctga 360 gaaataaacg ataatacttt aaatgaagtt ctaaaattta aattitggca icggttgatg 420 tiggataaag aaaacgatgg aggctagtaa tttttcttct tttttaagta tctagattgt 480 catatattga attittcagt tittcatccc titgaggaca atccaactat tattitcctt 540 ttcttatgta aaaggttgaa caacatattc aaacataaaa aaataaaatt aaatgaaata 600 aatttacaat tcataaaatt tacagaattt atgttaagaa aatattcaaa cttagataat 660. 720 aataaagcaa caaaatcgta ctaaaaagaa gtataattgt acattgtata ctactactcc 780 tacaatttta gacttagaat ttttaatttc ctgaaatcta gtaatgccat tttttcttt ctagttgaac cagacagtaa gtttaactcg aaacttataa gctaatgagc gaagtcgggc 840 aattcactcg tacctgacgg agcgagcttg gttcatggag aaggacttgt cgaactggtc 900 ctggggaggg tcggggagcg ggccggaggc ccgccccgg gagttggagt agcggaggac 960 ggcgacgccg gcgacgcgc gccacacggt gtcgttcacc atgcgcgcgc tggcgacgac 1020 gtagtagtcg gagctcgcgt tctggtcggt ggtgacgagg aaggagtagg actggccgac 1080 gtggacgtcc aggttggtgt agttctgctg cgtcgtgtag gagccctccg tctccaccag 1140 caccatgttg tgcccctgga tcctgaagtt gaggctcgtc gacgtcccca cgttgtgcac 1200 tcggatcctg tacgtcttgc ctgtgtcccc acaccgacgt cgccgacaca cgcgcaaaag 1260 ataatagact cattgtaagt aggtagtaac cttctccgtt tcatattata aatcgtttga 1320 ttatatitti gitagitaaa etietitaag titititet ataaaettaa itaaatetaa 1380 agaattttaa taaaaaaaat caaacgactt ataatataaa atggatggag tagttgcatc 1440 aatttgtgga tgaagcaaac aagattatat ccttttcatg agggtgaaag tattcagtga 1500 acaattcgtc agtttcaagt ttcatgaaat cggacagggt ctctgaaagt ctgtatttt 1560 ggtactgttg gattgactac tctggcttct gttgtcacat cttttgtatc ctagtttcgg 1620 taaaaaaaat tttggcattt ttactcctat cgttgatctg tttaactgaa accattgcat 1680 gatatactac tagcagacaa aactggtgaa aattcacgag aatgaacttt ttgtcagtta 1740 agcattagcg gacagctica gtaagcagag caggctgcct taaggcttaa agcactatct 1800 tccacaacac tttgtcctac aatcaaattc caaatttact atcacaaaaa gcgaaggaac 1860 taactaaacc ttactcctac tagtactact gctatgacta tgaaacaaga ttccaatcca 1920 aagaaaacac agtgctcgat cagcatgata aaagcaacga aacctgctca tccagctgcc 1980 aaaatgccac cccactgact ctacgtacgt actacgtatt gacgctgtaa aaaactagcc 2040 gtagtacaga gaagaggacc caaagtttcg tcaaaaattt tattttaccc ggatccacat 2100 tgatggtctc gtactcgatg ccggccggga caaggctgtc gttgtacctg tacgggccct 2160 tgccgttaat cagcacgccg tccggcatcc cgaggtcctt gccactgtcc agcatcttcc 2220 tcagatcctg caacgaattc

<210> 20

<211> 2601

<212> DNA

<213> Oryza sativa L.

<223> PCR marker C1361 MwoI

<400> 20

tcttgctgag atccaagttg cggtaacttt gcccttttct ttttttcttc tcttctgaat 60 tttttcatgg tttttgggag agattttcgt aacttgatta cagttctagg aaaaggccac 120 cttgttcaaa cagggctttc ttgaaaggga tcaatttgct aggagtacat gattctaaaa 180 gcgatttcga aataaaacac agttctcgat ctcatacctg aaaacaaaag gcccatactg 240 tgtaaactgt gattatgctt ctgttaaatg ggatatttgt acaaaattga cgccaaccac 300 360 tcagtgatcc gatgtcgtct cttctgcgta caacttctaa cagccgtttt cggtagtaca 420 aactagcgaa acaccaaaaa cgcagcattt gagttctgga atacgctgaa attgttagaa 480 tcaaccacga aaccaaaatc attgttcaga aacgttgcaa cgagataaaa cacaagaact 540 tgttttaaca aagcatacgg acagtacata tacggttaca acacccagtc tttatacagt 600 tctgctggag ttccatctac tggctgtcat tgtatctcag gacagacagg ttaacatagg 660 tacaacacaa ttacaggcta aaccgaagcg aactacactg tcagcatctc taacagtatc 720 gtcaagcaag cttatttaca gctgctctag taaatttaca acgtccctgg cagaatccct 780 ctcgtttctg gcagcgacga ggcacggtcc atggccttag caggacatct cacccgtcag 840 ctgcatagaa agcaaccgac ttcagtggaa t.cacctcctg ctcctgcaaa aaagttggtt 900 cgatcaatca cgcgtttaat ccaaaacaaa atgggtatta attatgctag cctatgaagc 960 tacctcagag tictctatti gctctgcagg gaaatgaagt ccagtggaac agttctcaag 1020

caccicaggg cicticatcc atgctttgtg tgcttcaatg gctttcagct tatagcgaaa 1080 catctgcgat acggatctaa aattaaggat gtcgacaatt acttaacaca acaaataatt 1140 gaagcaggtc cagttaaaga aaagtagcag cgaagaatag cactctgaag tctgaacctc 1200 agataaagaa atggttggtt tttccagttc atctccctca acatggattc cagtaccctg 1260 gcattctggg caaaggatgg atgttatttt cttaggtgca ttttttgcct ttcttcctcg 1320 attgcttttt cccttgcttg caattttgtc tgctagcatc tcatattggc ataaaatagt 1380 ccagtgcaca aggcaagaag tgtgaaacaa atgaaatgcc tgcaaaatta gccgtacaaa 1440 gtcattggag gttgcagcag aatactacaa atttttaaag aagaaactat acactgtcta 1500 tgttttgctt gaaatgaatt caaccacttt gcattatacg gtttggaatc cctggtttgt 1560 gagaactgta attccattac aacagtgaag aagttaccat aactaatgaa tggaaattag 1620 tcaaatgcct aattittag gtttgcttta attiatttat ctgtgagaaa tgctaagcat 1680 gtcatgcgtt gctatcttca agaaatacta agaaactgca aaggcaaaga atgtttgaaa 1740 taacttaccc cgcttgagtt tctactgctg caggctagat ttcctgtctt gcagttgagc 1800 aaggtagcta catcetttte aagaageatt ggtegeecae aaatateaca agetttetea 1860 gcagcaaggc gcttctgctt acgcaactcc ctcctcatag atttggtgga taagaggcca 1920 acttgaagat tgtgtgaagt acctgtcggg gaacctgtta tgatagcttg gctattgtca 1980 tgggcggagc tgctttgctc attcgactcc tctgaagatg cttcttgatc tgaaaatgac 2040 ttctttcttc tctttccacg gtgtccagca tcatcaatca cgaagaaaga tccagcagag 2100 ataggaaggt cctgatcatc agaagaccac ttcctgccca actcaattgt ataagagaag 2160 ttgacaatgg caaagtcaga ttgctcatag gtgtcacact catccaagcc atgggagcca 2220 tectgtecta eccaageaca ceagatettg etaatetttt taetteettt getagettee 2280 cataacctgt atgcaatatt tccatatccc aaaagatgca caggcaaatc cgaaacaaca 2340 tcctttagca atacactagg aataacgaga ggaccgtcag ttccactttg gtttgacagc 2400 acatgatett cagatacaga ageagtteta ceattaceat gegeatttge aceaeggegt 2460 gtgccttttg cgccattgcg agagctagaa tcatctctca acctcgaagt cacttcagtg 2520 tcgttcgctg gaaccagagc cagctctctg gtgttctgcg agctcgagtc cagcaagagc 2580 2601 gggtccttct cgcgcgagtt g

```
<211>
<212>
       DNA
<213>
       Oryza sativa L.
<223>
       PCR marker G2155 MwoI
<400>
       21
                                                                     60
ccctctgctt gatccagtgt acatccatgg gttaggacag attagttact cagttaatta
agtgtgagac tggaaaaaa tatctgacgg cagttttata agttgagtga ttgaactagt
                                                                    120
                                                                    180
gaaagttcag ttaactgtca acggctgtag atttgggatg gcagactgtt ctgagtcaaa
atgaagettt tactgtgegt ggttaceagg tgeagtaaaa taattteaga tetaategea
                                                                    240
                                                                    300
gtaaaaaaat gtagtactat atgttaagac gagattggtc ggtcaaaatc tatctggccc
                                                                     360
titacatoto coaaatgita cotoagitgo aggiggiaaa aaaaaatcac iogiiicacg
                                                                    420
tgatgtcggc agatcatgga ccatgtctca aatgctgaaa ctctgaacaa tcaacaaaaa
aatccaacca gatgagctgt gcaactgata attgatcatc acactattig caactcatct
                                                                    480
                                                                    540
ticatgiaga iggaactica atcccgaaga aataatgaca gcaaaatgci gcgaicciga
                                                                    600
agaaaggatg gcggcaaaat ggcagcgata aaaaaaaaat ggttggttac tgaagaatta
                                                                    660
tttgtgcage agttgagaea gtageaagat aagagetage taagetaget aggtagagtt
                                                                    720
ggatggaaga gtagtagtat gagatagagc atggagcgcg acaactcaag tggatgctaa
                                                                    780
agtaaaaggc attotottot citgitigga atcagaaaag aaaagaaaag aciigagoig
                                                                    840
ctiggctgga atgittggit ggatcatgcg cgctctcctt agcttagctc gccaagaaat
                                                                    900
cctcgcttca tctctctcaa taattcaaag ccacgagctc tctgctcata tccagtgcga
cgattcccgt taatgcaaat gcattatatc cagticgaaa tgttacaatt cttgcgtttg
                                                                    960
cagcaagcca gcaagtggtg tgaattgttt aatccctcgt gcatttcaac gaaattctct 1020
cacaaattog cattgactic titottagca caattagtaa gcagtgacaa ataaagaatt 1080
tttgaacagg atgictiicc aaggaaggig agaittiita igiggatagc aaggaicgcc 1140
tttccttagc atgaagagaa igtgatcaac tttacacctt gcttacgatt atggccttaa 1200
tttttgatac cctaaacagg agcacatcac atgcatgicg acctgagacc accaattaac 1260
tgattaagtt ggcatticag atgcatccgt cagitacatg atcaggtgat cgatggatca 1320
                                                                   1333
actgtaggtt tca
```

1333

```
<211>
       863
<212>
       DNA
<213>
       Oryza sativa L.
<223>
       PCR marker G291 MspI
<400>
       22
cgaacaggat caaaagtaga cgacgagggc atttagaagg agaggaattg tatttgttcc
                                                                      60
cggtatttaa tttttaaatt tgtggtcgga agtttcggaa gaaaaaatgt gctcatgagt
                                                                     120
gattattggc tctgaacacc aacctctctt ttcgttgatt ccttctgagg tgttgggtgt
                                                                     180
tgggacacga tgctgccgcc gacacgacac cgggttccac aatacactaa tctactcgcg
                                                                     240
                                                                     300
acaccttcat tgaactgcat ataattattt agaaagtcca ttaacacatc ttataaaacc
ttgttgaatc atataatcat tctataaagt ctatttgaac atcttatgaa aaaataagat
                                                                     360
ctgacctagt cgttacactc tcttacattt tccattagcc taactaattc cgtgcaggaa
                                                                     420
acgcccaaaa ataatagtac caatagtcca ctaatcccgt gccagaggcc gccaatgatt
                                                                     480
agtgattaac ccaaaaaaca taatcatcat cacacgccgc taatgaccag ctctcgctta
                                                                     540
gctcatccca caggcggccc ccacacgcca ctcctgccat gtgggcccac ctttcacacc
                                                                     600
                                                                     660
ccccaccaac cagaaaaaaa actcccccaa aaaaaaaact tttaatgctt atctcgcggc
agtataaaag gcgaccccac cacccacaca caatcacagt cagcgaccca acccaacccg
                                                                     720
agccgaggag tcgagtcgtg tgaaaattac gaaattgccc ttcgactcca ccaccaccac
                                                                     780
                                                                     840
ccaccggcga ggcgaggaga ggagaaaaat tgggaggaaa aaaaaaggga aaaagaaaaa
                                                                    863
gggtggagga gatttttgcg aag
<210>
        23
        1510
<211>
<212>
        DNA
<213>
       Oryza sativa L.
<223>
        PCR marker R2303 BslI
<400>
        23
tgccatgaag acctatggaa agaatatett etteteacte tgtgaatggt gagtttaete
                                                                      60
```

22

<210>

```
tctgtaacat ttagggctag gtcgaaggaa catgaagcat tgctgattca ctccactgtg
                                                                    120
ttttttttt ctgtataggg ggaaagaaaa icctgctaca tgggcaggcc gcatgggtaa
                                                                    180
                                                                    240
cagctggaga acaactggcg acatcgccga caactggggc aggttctact catcctctct
                                                                    300
ttaaccctgt ttacatagtt cttgagtitt tcagtactga tcgtaattgc cctgttattt
                                                                    360
cagtatgaca totogtgcag acgaaaatga ccaatgggct gcctatgctg gacctggtgg
atggaatggt aagaacttga gatgtatctg ttcctaggtt gcttaaccat ttgagagctt
                                                                    420
caaaatgatc aacatatgtt tctgctgtgc aatatcagat cctgacatgc ttgaagtggg
                                                                    480
aaatggtggg atgtctgaag ctgagtaccg gtcacacttc agtatctggg cactagcaaa
                                                                    540
ggtaccatag catgitictat gtactaataa tittgcigca aigitgaact icitigcatt
                                                                    600
tcctcactgc aagttttgct tgaattgttc aggctcctct tttgatcgga tgcgatgtgc
                                                                    660
gctcaatgag ccagcagacg aagaacatac tcagcaactc ggaggtgatc gctgtcaacc
                                                                    720
aaggcaagcc ttctcagttt cacatgctta gatttagcca tacctcttgg atatttcacc
                                                                    780
atactcataa tgtaactctc tgaacagata gtctaggtgt ccaaggaaag aaagtacaat
                                                                    840
ctgacaacgg attggaggta tcccttcaat ggcttccaaa tttgcagttt ctcattgtcc
                                                                    900
cataagcett ggcatgatca tgactaacte tgaagetgae aatactttgt gtaaatttgt
                                                                    960
cggtaggttt gggccgggcc actcagcaac aacaggaagg ctgtggtgct ctggaacagg 1020
cagicatacc aggcaaccat cactgcacat tggtcgaaca tcgggctcgc tggatcggtc 1080
gcggtcactg ctcgtgatct atgggcggta aagcctttgc tttcttcaga gctcaaagta 1140
gaacatette tetteagaat teagagttea taacaaattt etgteaattg tgeageacte 1200
ttcgttcgcg gctcagggac agatatcagc atcggtggcg cctcatgact gcaagatgta 1260
tgtcttgaca ccaaactagt cagcaaagaa aagcagcaca ggttagtacg tgtccggcga 1320
atacagctaa attgatcagg attcaggaag aaggtttgca atttgcaagg attggtagag 1380
ctggaaatgg gatgccattt ggttatgtat gtagaaataa gctgtaagcc tgtaagcgta 1440
tatgtaatca gccgtcaaat gctggcgagt gtatttctga agtttgcaac gaaagttgca 1500
                                                                   1510
gcaataaaaa
```

<210> 24

<211> 1016

<212> DNA

```
<213>
       Oryza sativa L.
<223>
       PCR marker BstUI
<400>
       24
                                                                  60
tggggatict titctitaag caatitaaca tiatigicct aacaatatac acaatatigg
                                                                 120
tttttctttc agiatcaaat aattctttta cttttgaaaa cacatttgca atgtgttgga
aacacaatta tatcttgcac ttccttttgg aaatttaatc atttgaaaac tgattcgcgt
                                                                 180
ttcatggctg taatcttctc ttgcgaacat cgctctttct ttgatggttc tctgttgaga
                                                                 240
agaagagcaa ccaagtaaat tttcgaaatg ttttttgtt ctttctattc accattgcag
                                                                 300
gttgtcaaag ccatcgagaa ggccataccg attccgagag cgcaacccat tgccttggat
                                                                 360
                                                                 420
ggcccagcaa gggaagagct gaaggccatg gaggcgcaga aggtcgagat cgaccgcacc
                                                                 480
gcggcgctcc aggtgcgccg tgagctttgg ctggggctgg catacctcgt cgtccagact
gccggcttca tgaggctcac attctgggag ctctcatggg atgtcatgga acccatctgc
                                                                 540
                                                                  600
ttctatgtga cctccatgta cttcatggcc ggctacacct tcttcctccg gaccaagaag
                                                                  660
gagccctcct tcgagggctt cttcgagagc cggttcgcgg cgaagcagaa gcggttgatg
                                                                 720
cacgcccggg atttcgatct ccgccggtat gacgagctcc ggcgagcctg tggcctgccg
                                                                 780
gtggttcgga ctccgacgag cccctgcaga ccgtcgtcgt cgtcgtcgtc gtcttcgacg
                                                                 840
ttgtcagaat tttttcatgc ccagtttatg ggggttaagc tagcttctcc attgtaccgt
                                                                 900
                                                                 960
totgatgtgc ggatgatgcg atgcaaagca tagtttgttg aagagatgac aaggcagatt
ttagcttgaa aacctggagg tgagaaaaaa aaatcctgat gtgtttgtgt gtgtga
                                                                 1016
<210>
       25
<211>
       676
<212>
       DNA
<213>
       Oryza sativa L.
<223>
       PCR marker S10602 KpnI
<400>
       25
accaccttca tatgaagaaa ttaacggtgt tttcatgagg aatccaacag tcgctgaatt
                                                                  60
```

ggtggaaact gtggaattct tcttggctga ggtaaccaat catcacttca ccacaatgca

120

```
180
caagtitgta gcitactact acagtactic taataagitt igicigiiga gaittitatig
                                                                    240
ctgatttcta tgcatggtca tcittttgac aggccatcca gicttatcgt gctgagagtg
                                                                     300
aaactgaget caacetggea getggtgact atatagttgt eeggaaggta eggeeetate
                                                                     360
ttcccattgg acatgittct aaccataaac atatcittgc tggactiitg tgggcaaagi
                                                                     420
tggctacact aaacttgtgt tcattaacct gctcaatcag gtgtcaaaca atggatgggc
agaaggtgaa tgcagaggga aagctggctg gttcccttac gactacatcg agaaaaggga
                                                                     480
                                                                     540
ccgtgtgctt gcaagtaaag tcgcccaggt cttctaggcg ttcaatgagc catacataca
                                                                     600
taaccctggt gitgtacact giattatgat cgitcgtgat citcaaagac ccictgatca
                                                                     660
gagaaatcac aaatattett tigitetatt aitgicatta teactaecce tiitgicaaa
                                                                     676
accagtgcag cctttt
```

<210> 26

<211> 1059

<212> DNA

<213> Oryza sativa L.

<223> PCR marker Tsp509I

<400> 26

gcgagatcat gaacttgatt ttctggttgc catattgggc ttgcttgtta accttgtaga 60 120 gaaggatage ettaataggt aagteettea catgetteet teeattiget caatteatat 180 cagigitaci gitciggcag ticcitgggg icaggacica gaaacaicca aitaaigiic atgitetett aacgaeteag aaataetita taaeetetee acagggiaeg geitteatet 240 gcccgtgttc ctgttgatct atctcagaat ccacagagtg aagagacaca gagagatgtc 300 360 atagcactcc totgttotgt attottagca agtoaaggtg ctagtgaagc ttotggaact 420 atatcaccgg taattcaaaa ttcttcaagt tccttttgta tgtagattat atctttgtaa 480 aacteggeat tiattacetg etettigitt caaaaageag tattitatit igeteettag 540 cataggicag cagaacagii gaicitatic agaaaacaat attiigcaig taacatacig 600 ttatctatga gatgaaaatt aatgcatgtg taataatgtc aatgataaat atttgctatc 660 tgaatccagt ctaccaactc tagttagacc gaattaciga ggttctatit caaagaataa tttagtgcac catttgttca actactatga agtaaaatgg tattcccttc tattgacatc 720 gggttagaag tgaaaggcca tcttaatgcg atgttctcaa tgccacaaac ccacaaattt 780 cattaacaca tacagattat tattaacata gctataaatt ggatttccag aagcttgagt 840 tgaatttatt ttgttacaat tgaaagcact gggaacatta gcatttttt ttagttcttg 900 gttattgcaa tttataatgt tatacagaac tgtgtacctc acaatgcatt cattatgaca 960 ttctatgaac catttgattg actgttgctt gtaaacaaca ggatgatgag gagtctttga 1020 tgcaaggagc acgggaagct gaaatgatga tcgtagagg

<210> 27

<211> 76363

<212> DNA

<213> Orza sativa IR24

<400> 27

gatcaactaa caacctcttt gcagcaaaaa agcatacaca caagtgtttg tcttggcctg 60 gggctctgca gatggactga tactctgacc tgcagtgggc ttgggagcta acaatggttt 120 cattcttttt ttttttatgt tttcccctgt tgtttttgct catgttttgt gtaattttt 180 cttctcatct agcgatgtta tttttcttag catgatggga gtagccctcc ttttttttc 240 tctaattaag tgtaaagtag caacagcata gggatgaatg ticagtgtag tgtgtggtgt 300 ttcagttatt cagagacgtc catacagttt gtaccttgtg accacacgtc ttaatctgat 360 gaagettaga ataaateaca tgttageaat geaatateat etgegtette teteaetttg 420 gtggccatca aattctgtgt agaagtgtat ggttggtgtg ctgttgcaaa tgccgtattc 480 cgctctgttt tgtggaagtt aagaagtccc tagttgaaat accgattitt catgatctcg 540 gagattgatg caactctgat tgcagcattt ctttttatta gaatgtacac tccatgctat 600 catgatgttt attgtttagt actacaagat ttggttaacc attattttaa tatcataata 660 attttataaa atcttggagt aacaagttca taatacatga tagcataact ttttgaggct 720 agtctatgta tattgtctcc tttgttttta aactaagcac tcaataaatt attgatggct 780 gtaattttct gaaggtttca ccggtttcgg cccgtgcttt ataaatagct tcggcacaaa 840 agacaaaacg gtccctccaa cacataaatg gttgagttta cgttttcatt atctttggta 900 aaatcaagtc caccacgtag acactcataa caaaagtiig aatatcctca gaaatttiga 960 cttgagtcta tcttaccttt gatatcggac atccaaccct ccctccctcc ctgaacttta 1020 tattattcat attacacctg aactttatat tattcatatt acaccctgaa gtggttttca 1080 tttaattgca tacatgctga aatagtttga caacgtgaga tgcactaaaa atctacacgt 1140 tcgtcttaag ttgcaattca ttttatccct tttctttttc tctcttacat aggaatatca 1200 atagtactaa ticacattac aatatagtat aaatiggtaa togattatig gcaatatact 1260 atattaaata ttcaaaacta gtcatttaag ctgccaaata agtaaaccac tatcgaaaac 1320 cacaatataa atggcattac aaaacttagg gggttgaata tccaatttta aagttcatga 1380 tgctagagga attictatca aaagtitatg ggtacatatg gactititicc titttaaaag 1440 aagctattct tgtcgtaaac gttaaatatt ttttgtactt tatttttat gattgaaaaa 1500 aaaacttagt tttcaaaatg attggtctgt atacaagcat caattagact taataaattc 1560 atctaacagt ttcctggcag aaactgtaat ttgtttttgt tattagacta cgtttattat 1620 ttcaaatatg tgtacgtata tctgatgtga caaccaaacc caaaaatttt ccctaactcc 1680 atgaggeett acagatatat ttgatgggtg taaagtttti taagttettt gggtgeaaag 1740 tttttaaagt atacggacac acatttgaag tattaaatat agacaaataa caaaacatat 1800 tacatattct gcctgtaaac aacgagacaa atttattaag cctaattaat ctgtcattag 1860 caaacgttta ctgcagcatc acattgtcaa atcatagcgt aattaggctc aaaaatattc 1920 gtctcgtaat ttacatgcaa actgtgtaat tggtttttt ttcgtcaaca tttaatactc 1980 catgcatgtc caaatatttg atgcgatctt tttggccaaa ttttgttgga atctaaacaa 2040 ggatcaaatt tgctgaattt ttccagacgt cacggcttgt tcatccatcg ttcgcatcgc 2100 gattcgccac cgacgccttg gtttccaacg aattttatca tccgcttaaa tacatccaaa 2160 gctctccatc gccatcggcg gccaacggcg accgctccgc tctacccaat ccacccatcc 2220 aggaggagga ggaggcgtga gcccctatgg ggaccctcct ccggccgcgt ccgcttgccc 2340 acgccgccgg cgccggcgac gccacgccgt cgaccgcgca cggtagccac gcgcctctcg 2400 agaggccccc ccccccgcc gctcgctgat ctctcttctc atcctgtttg ggtttgggtt 2460 tgtgatttgg gtgtttttt tttttccgca gcggtggtgg tgagcggtgg ccgcggccgt 2520 ggcgtggagt gccagccgca tcgggtgcgc cgccgcccgg gtccgcaggt tgcggtggcg 2580 acggcgagct ggaggaggcg gagggagacc gtggtgagat cggatttcgc cgctggtggt 2640 gccgctacca tgggggattc gccgcaggcg ctctcaggtt tgcagcctcc tccactctct 2700  tttgctggaa cattacattc ggaacgttgt tggcaattgc ttgacaaaat gtggaattgt 2820 ggaggggaga aaaatcgttt gaacctgcag tgacaaaatt gccatctata attttaaaac 2880 tgaaggtgtg gaaatcaaac ataatcattg ccagcacatc attcttgtta accaccttga 2940 catattgttg gcttataaca gttagctcca caccaacttg gaaggtgtca aiggaatgta 3000 agiataaatt gaggataact ggcagttgtt aagactttct acagaacttg tagcagctaa 3060 aactagctat tgtgcattta tgtttcatgg aatttgagcg gcaatggata tttcttacta 3120 agacgtataa tgcaaaaaaa aaaaaaaaac tatgtctatg cagtttacat gtaatgtgcg 3180 gatgcaaata aaatcatgtt catggacaaa ctaatgggat tcataccaaa ttccagaatt 3240 gcatttctta tgtggttact tttgtttgtt gatttggtta ccagacatcg atgtggtttc 3300 aagggtcaga ggggtttgct tctacgcggt gactgcagtt gcagcaatct ttttgtttgt 3360 cgccatggtt gtggttcatc cacttgtgct cctatttgac cgataccgga ggagagctca 3420 gcactacatt gcaaagattt gggcaactct gacaatttcc atgttctaca agcttgacgt 3480 cgagggaatg gagaacctgc caccgaatag tagccctgct gtctatgttg cgaaccatca 3540 gagtttcttg gatatctata cccttctaac tctaggaagg tgtttcaagt ttataagcaa 3600 gacaagtata tttatgttcc caattattgg atgggcaatg tatctcttag gagtaattcc 3660 tttgcggcgt atggacagca ggagccagct ggtatggctg tagtctcatc cctgctttct 3720 taagtagaca tatatacatt tacagtattt ggtaaataaa caagatttta tgaatcatat 3780 atgattttgg ggaaaacaca aaactctctt tgttggctgc cttgaacata gttctgttca 3840 cacagitata gcaccitcii taaaatgaag aaciitgiig catacacata aggccaaacc 3900 acataatgaa ttttgtttat ttctatcttt gaatgttagc atcgtttttg tttaatgcat 3960 gatcgccttc ctatatattt gtagtatgtc aacattgtat tccatgctga gcataacaaa 40.20 tggtttgtta aaattcagga ctgtcttaaa cggtgtgtgg atttggtgaa aaaaggagca 4080 tctgtatttt tctttccaga ggggactaga agcaaagatg gaaagctagg tgcatttaag 4140 gttcagtaac caaacttagg ttacattaca tctaatgaga tttttatatt cagtatataa 4200 tgttaacctt ctcatggtgt actgacgtgg ttataaatgt ccccagagag gtgcattcag 4260 tgtggctaca aagaccggtg ctcctgtgat acctattact cttctcggga cagggaaact 4320 gatgccttct ggaatggaag gcatccttaa ttcaggttca gtaaagctca ttattcacca 4380 tccaattgaa gggaatgatg ctgagaaatt atgttctgaa gcaaggaagg tgatagctga 4440 cactcttatt ctaaacggtt atggagtgca ctaaagaaag atggtgtttt titttattat 4500 atggaaccta ttcaaaggca cagacaggct ttcaaggcta agcttgttac aggtactgat 4560 actagttact aattactitc gtaatcagta taaataagct tgtgtagtgt aatggcattg 4620 tacatttctg cacttggtaa atttacagaa gaggcaagta atattttaga ggattgagtt 4680 tattcaccca gtcatatagt tgaagaggca agtaacctgt aagagaggac tgaacattaa 4740 caccictigt tcgattaaaa atgaccaaag agcatcaaac atgtattcga ggctgttact 4800 ttagatatgg cccattaatt tgtttagttg tctatgtaca tcctagttgg tgtaaatgcc 4860 agttaccatt tctatgatct aaaacaatca actcttttag tatattttca aaaacgaaat 4920 tcagtacaca tgtatgaatc ttaatattct tctctagctc gttacaaaag caacaaaggc 4980 accgtgtcag ctggttcaca ttagctagtt tgtacttagc attatccact agcaccttat 5040 tttcatgcat atcatgctaa tttgcttgcc cacgttgagt gggaattttt itcatgtttt 5100 ataatttata tatgtttiag acttctagtc cacaatttat gtacttcatg ttcctgagcc 5160 tctagtatgg ctgatagcag actaggtgct gagtgctgtc cttttttgca gactgaagag 5220 agaagaaata caagactgtc cattgttagt cagatttgta aaaatagact ctgatgtagt 5280 ttacttttgc ccctatttta tttttaacaa tacaaatata taacagatcc taagaactta 5340 tottaattta ggagaagttg otogittoat taaattaaat tgigaagtaa aaatgigigo 5400 tcgagtctgt caatgcaatc ctgtgttctt gtttgaagat atggtgtagg gcaggccagg 5460 attgaacact gaatggtaag actgcttctg ccttcagacg ttattgctaa attittagct 5520 acttgcagtt agtgctgcca cgccgattaa gcagtagaac aaagtagttt tgtcgtgcac 5580 aaatgagtta tatttcattg gaaatcgaag cgaaaacgaa tcaaaagtta gaagaaaagg 5640 ggaaacttgg taattactcc ataaagagag igcatittat iggtaagaig gtaiccggaa 5700 gctgtgagct ccgggctgta tgtattctgg caaatttgat atgagatgct cgattattgg 5760 cttaagttag cgatatcaaa tttggggaag caccaaagga attattgtga aggagttatg 5820 ggtgcgtgac gttatctgct aggttcaaat ccttgtggct atgaatattt atctgctagg 5880 gtttctttaa gattgtgcca tcggacgcca ttcggtaact gtaataatgc tttgtattgg 6000 atteactigt gitacatgea egeactaaac atgigetita eetiticate igititigeg 6060 ttctgggcta gaaactcaaa cgttgaattt tccatggtct gctcaacttg acaattactg 6120 cgigicaagc gatcitatac gcataciatg cgcacaagig aiigtatacg gataigaiga 6180 cagtataacg tgtgataitg attititaa taaaaaaaig atgitcaiti ccttgatgaa 6240

ggaacaaaga cttttttaa aagaagggta ttactaaaaa caaaaatgac aaaaacaaaa 6300 tatcagtgca catggcaagt gtgctcggca atttttctc tgtactttaa acaaaaatac 6360 ttctatatgt tctttttat aagggtggca caaatctttt aaatgagcca aatatctaca 6420 ttggatttat taaaaactgt ataaattata atttatactc tgaaaggttg tgtgcatctc 6480 tcttggagaa aatgtataag ttgcaaacaa acattaatcc acgttatgta acttttttc 6540 gccggaaagg ccgaaggagg cctgacggag cgtggggctc ctcaccggga gaccgcgcag 6600 gcccccttt gccggttcgg ccggggactc agggtgaaat tctaagctct ctgtatgtgg 6660 aaggttcgcg accgtcgaaa gagcataaga cacgggcgat gtatacaggt tcgggccgct 6720 gagaagcgta ataccctact cctgtgtttt gggggatctg tgtatgaagg agctacaaag 6780 tatgagccag cctctccctt gttctgggtt ccgaatctgg aaaagtccag tccagtcccc 6840 ccctctaagt gggcaaggtc ctccttttat atcttaaggg gataccacat gcaccatctc 6900 cctcctttct gtggagactt accctacctt ttcataaatg gacggagatt tgtatagttg 6960 ccgtccgaat gaccttctga taggacggcc catacctacc tccacttccg ccgaaagcag 7020 gtgcgacgtg ggattatggc tgtctgctga cgacatgacc agtgtcagac tggtcacaaa 7080 ttgctcattc ctgtccacca cgcgtcagtt tagcaatcta catgttggcc cttcttcaca 7140 caacatettg cetgtaatgg ttaggatgaa geetggeata tatetaacea ggaetaaegt 7200 gccatctcta ggaggtaaca cgctagctcc agctggggac gagcgcctag aagccctcgt 7260 cctgacggga tggggcgagg cgtgcgtcag atcgcctgtc gccacctaac ctgcgatctg 7320 accggtctgt gactggtcac agaccggata aacgagtgca ctgcacttcg ttacatgcag 7380 cgtgacacgc tcagccaaac cgcaataaat gtggttaggt gagccccgct gtgctcacct 7440 aacccataca cgcggagcaa aaacccacga ggggtcgggg cgcctcggcc ctcggggccg 7500 aggcgggtgc ggtccgaccc cctcgggggg actaagagga gggcgaacac atcaccctcg 7560 ggcccgacgt cccccgaggg tgccaggcca cgtgggcgat tgtgtctgcc tcaaacctct 7620 agicatgata ciccigatee catgicaceg acagiageee eeggegitat gecagggega 7680 tcgccctctt taagggaagc ggtcgggcgt gacgccactc ctaaggcctg gtgacaggtg 7740 ggaccggtct ccacaattgg gcagaaaccc aacggtcaca aatcacgcac atcggcaatg 7800 gtaactctac tatcaataat gagcggtctc ttcaagactg ccacattact cgagtagcac 7860 acgaatctgg acatggcgat tcgtttcgtc tggagatatg gtaacgtcgc tttggtcggc 7920 gagcgtaatt aacgcgcgca cgatatgatc tatctcgact gccacaaccg catatccacc 7980

tcatgcgccg caagcgggcg aatgggatta gtggaagcgt gggcgcgaga aacgaggggg 8040 cgaaatagtg ggcgcgagaa gcgaggagcc gggcacagcg ttggcaagag tataaaggca 8100 ctgaggaaag gatctgtttc cttcctttcg ccatcatttc ccttgtcttc gccgcttgcg 8160 ccctaactcc ttctttcctg tgctctactt tcgccacacg cgctcgctct caatcttctc 8220 ttcctccggc gccatggcac ggggctccgc tctgctcgat ggtagcgtgc tgccgccttc 8280 cggccgggag atagtcacgc tgggcgaggg acgcccggcg ccagactacc cggggcggtc 8400 cgtcttcttt ctcccctttg caatggcagg gctggttccg ccattttctt ctttcttcat 8460 ggatgttctg aagttctacg atctccagat ggcgcacctc acccccaacg cggtgatgac 8520 attggccatc ttcgcgcatc tgtgcgagat gttcattggg gtgcgcccat ctcttcggct 8580 gttccggtgg ttcttcaccg tgcagtcggt gtcgccgcca tcggtagttg gtggctgcta 8640 cttccagcca cgggggccgg tgctgaatcg ctacatcccc tgcgccctcc gcaagaagtg 8700. ggacgactgg aagagcgact ggttctacac cccctcgcc gacgaagcgc gcctccgact 8760 tccgagccag cccccggcgc aggcctccag ctggcgggcg ccggtagatc tggggggatgg 8820 ctatgacgcc gtcctcgacc gcctggcggg cctacgatcc caggggctca cagggaccat 8880 ggtgtacggc gactacctcc gtcgtcggat tgcgccgctc cagcggcgcg ctcggggcgc 8940 ctgggagtac accgggtccg aagactacat gaggacccac cagggagtca gatgggactg 9000 ggctcctgag gatttcaaga tagtggtcca acgggtgctg aatctcaact ccatggaggc 9060 gtccctcatt ccccaaggaa tcctccctct ctgcagcgat ccagaccgcg cctccatcct 9120 gaccattatg acggcggtcg gggcctcaga ggagtgagct ccaaagggcc acgacggcgc 9180 aggcgggagc cgtagggggg atcaatctac ccggggaggg ggtcgtgctt ctgggtctcg 9240 cgacggaggc ccgaggagca gccgccctgc cgacgcccgg gggaagagga agcagggagg 9300 aacacctccc ccatctcctc cccgaggggg cggggcggtg cgtgccagca gcaggcgccc 9360 ggagggggcc gcgccgacat cgcagcccga gggggagcgc aagaagaagc ggctccgcaa 9420 gatgggggag acagaaccat ctcagggaaa ccttatttcc cctctaaagt ggtcgtttaa 9480 ccgacccct cgcaggttcg tctctcaccc atcgtggctg tattcattct ctcaacgcga 9540 gttttcactc acceatettg ttcgtcttct ggtcttttct tctgtttcag cgagateceg 9600 tcgcgtccct cccgccattc caagtccggc cagtctgagg ccgaggatcc ggcggccgca 9660 gaggecegga ggegggaate tgaceggega gaggeegegg ategeetaeg ggaageegag 9720

gaggccgccc aggaggccgc ccgggctcgc caggtcgagg aaaccgctcg ggaggaggcc 9780 gcccgggccc gccaggccga ggaagccgct cgggaggagg ccgcccgagc ccaccaggcc 9840 gaggaagccg ctcgggagaa agccggattt cgccaggacg aggcaatggc gacttccgag 9900 gcagctcgcg atgaggtcgc gggcgcgtcg cttgagccca cttcctcggg cgacgctcag 9960 gcgacaactt ccggggcagc tggcgacgag gctgcgggcg cgtcgcttgg gcccactccc 10020 tcaggcgacg cccaggacca accaggtccg agggacatcc ctgagtccgg cacttccatc 10080 ggcggcccga gccgcgtggc atcctctcca aggcggctct tccccacgcc ttctatcgcc 10140 ccactgagcg cagagccct tctgcaggcc ttggccgccg caaacaccgc ggtgttggac 10200 gggcttagtg cccaggtgga ggccctgcaa gcagagtggg cggagctcga cgccgcgtgg 10260 gcgcatgtcg aggaggggcg gcgctcagtg gaggccatgg tggaggtggg ccgcaaggca 10320 caccgccggc atgtctcgga gcttgaagcc cgtaagaagg tgttggcgga aatcgccaag 10380 gaagtggagg aggagcgggg ggctgccctc attgccacca gcgtgatgaa cgaggcgcag 10440 gacaccetee geetteaata egggagetgg gaggeggage tagggaaaaa getegacace 10500 gcccaggggg tgcttgacgc tgccgctgcc cgagaacagc gggcggggga gaccgaagcg 10560 gcgtcccgac ggcgcgaaga gacccttgag gcgcgcgcca tggcgctgga agagcgcgcc 10620 tgcgtcgtgg agagggatct ggcggaccgc gaggccgccg tcactatccg ggaggcaaca 10680 ctggcggcgc acgagtccgc ctgtgccgaa gaggagtccg cactccgcct ccacgaggac 10740 gcgctcaccg agcgggagcg agctctcgag gaggccgagg ccgcggcgca acggctggcg 10800 gacagcctgt ccctccgcga ggcagcgcag gaggagcagg cgcgccgcac tctggaatgt 10860 gtccgcgccg agaggaccgc actgaaccag caggccgctg acctcgaggc gcgggagaag 10920 gagctggacg cgagggcgcg cagcgacggg gcggctgcgg gcgaaaacga cttagccgcc 10980 cgcctcgctg ctgccgaaca taccatcgcc gatctgcagg gcgcgctaaa ctcgtccgcc 11040 ggggaggtcg aggccctccg cttggcaggc gaggtagggc ccggcatgct ttgggacgcc 11100 gtctcccgcc tagatcgcgc cggtcggcag gtgggcctct ggagagggcg gaccgtaaag 11160 tacgccgcca accatggagg cctcgcccag cgcctctcga agatggccag ggctctccaa 11220 cggctccccg aggagctcga gaagacaatt aagtcatcct cgagggacct cgcccaagga 11280 gcggtggagc tcgtactggc gagttaccag gccagggacc ccaatttctc tccatggatg 11340 gcgctggatg agttccctcc tgggaccgag gacagcgcgc gcgcaggtcc gggatgccgc 11400 cgaccatatc gtccacagct tcgagggctc agccctcgg ctcgcgttcg ccccaactc 11460 cgacgaggag gacaatgccg gtggtgcaga cgacagtgac gatgaggccg gcgacccggg 11520 cgtatcggat tgatccccca agcccccgcc attctttagt tttttcttct tttccttctt 11580 ctaaggeett egggeetett tittgiatag ateaacttaa teigiaaica aaaatgaaga 11640 aatttttgtg tcaatttcat cttgctgtgt gtatgagatg aggatgatct gtgacgtggt 11700 ccttttgcgt cttagcttga ttaagggctc gtgcccaggt cccagtcctc aaaaggcgtg 11760 ggtcggggct agtgcctggg gagatccaca tgtcgagact ggccaggccg ggaacgtggt 11820 gaccgagggt tatgggtgac ccgattgtgg gtttttgccg attcccccc ggagttcacc 11880 acgccccggg gcacgctcg gttctgggcc ccgtttggcg attttagccg acccgagccc 11940 ccgagggcag gattgagcac gagtgaccta tttcaagtca agattcttca aaaggaaaaa 12000 aaaacacaga tacagccttt aggaaattga aactgctttt attgaaatac tgaaataaga 12060 gaaataagaa tgtgcatgtg tggcagcccc cggccaacgc tgcacgcccg agggggtgcg 12120 gggttggccc gagcccgaaa cctgacaccc gaccccccc tcaggggtag aagcgacgaa 12180 ggtgttcgat gttccacggg ttaggcagct caatgccgtc gcccgtggcc agccgtatgg 12240 agcccggccg ggggacgccg accactcgat acggaccctc ccacattggt gagagcttgc 12300 tcaatccagc acgcgtttgg acgcggcgta ggacgaggtc gtcgacgcag agtgatcggg 12360 cccggacgtg acgctgatgg tagcgccgca ggctctgctg gtagcgcgcg gctctgaggg 12420 ccgcgcgccg ccttcgctct tccaagtagt cgaggtcatc tctgcgaagt tgatcttgat 12480 cagcctcgca gtacatggtg gcccgaggag acctcagggt gagctcggat gggagaaccg 12540 cttccgcgcc gtagacgagg aagaaaggcg tttccccggt tgctcggctt ggtgtagttc 12600 ggtttgccca gagcaccgct agcaactcct cgatccatga atcgtcgtgc ttcttgagta 12660 tgttgaaggt cttggtttta aggcctttga ggatttctga attggcgcgc tccacttggc 12720 cattgcttct ggggtgggca ggtgaggcga agcagagctt gatgcccatg tcttcgcagt 12780 agtogoogaa gagttoacta gtgaattggg tgccattato ogtaataata oggttaggca 12840 ctccaaaccg ggccgtgatg cccttaatga atttaagtgc ggagtgctta tcgatcttga 12900 cgaccggata agcctcgggc cacttagtga acttgtcgat cgcgacatac agatactcaa 12960 accegecegg ggecegecta aacggteeca ggatategag eccetagaca geaaatggee 13020 acgaaagtgg tatggtctgc agggcctggg ccggctgatg gatttgcttg gcgtggaatt 13080 gacacgetet acategeegg accaggtega eegcateatt gagagetgte ggeeaataga 13140 aaccctggcg aaaagcttta ccaaccaagg tgcgcgaggc ggagtgggct ccgcattcgc 13200

cttcatggat atcggcaaga agcacaacgc cttgttcccg aggaatgcac ttcaggagga 13260 ttccattagc cgcgcgccga tagagggtcc cttctaccag cacgtagcgt ttggagatgc 13320 gatggacgcg ttcactccct tcgcggtcct cgggtaaagt cttatctgtg aggtatgctt 13380 ggatctcggc aatccaagca atcaatctaa gggagctggg agcgctcccc tcgggtcccg 13440 aggcctggac ttcgacgggc ctcgggggcc ggtcaggcgc gtccgtctcc cctaaggggt 13500 cgggtcgcgc cgacggctgg gcaagccttt cttcaaaggc gcccggtggg gtctgggctc 13560 gcgtggacgc gagccgtgag agttcgtcgg caatcatgtt atcccgtctg ggcacatgcc 13620 gaageteaat eeegteaaaa tggegeteea taegeegtae ttggegeaeg taggegteea 13680 tctgcgggtc agagcaccgg tactccttac agacttggtt aacgaccagc tgggagtcgc 13740 ctaacaccag gaggcggcgg atccccagtc cagctgccac tctgagtccg gcaaggagtc 13800 cctcgtactc tgccatattg ttagtcgctc gaaagtcgag gcggaccaag tatctgagga 13860 cgtctccgct cggagaggtc aacgtgaccc ccgcaccggc gccctgaaga gacagggagc 13920 cgtcgaactg cattacccag tgggcggtgt gaggcagctg cgaggggtcc gtgctggcct 13980 cggggattga gacgggctcg ggagccgggg tccactctgc cacaaaatcg gcgagagcct 14040 ggctcttgat agcgtgacgt ggttcaaagt gcaaatcgaa ctcagaaagt tcgattgccc 14100 atticaccae cegiceigia eccietegat taigeaagat tigacegagg gggtaagaeg 14160 taaccacagt gacccgatgc gcctggaaat aatggcgcag tttcctcgag gccatcagaa 14220 tagcgtaaag catcttctgg gcctgagggt atcgggtttt ggcgtcccgg agggcctcac 14280 taacaaagta gacgggccgc tgcacctttc ggtggggccg atcctcttcg ctaggggccg 14340 catecetggg geactetteg tecaageage etegeggge geactigiet tetgigetga 14400 tgacctcggg gtcggaggat aacaggggcg gccttcccac agtggctttg gggccgtcct 14460 gggggtcagg ggctcctggc gtcgtcggac aagcgggcaa agggccaact ccggtcgtca 14520 ggggccttag gcctccgttc ggctcggggg cctcttctcc ctgctctttc ccgggtcgag 14580 tcagcacagg gttagcctcg gggtcaaagg gcgataggtg cggccttccc acagtggcct 14640 cagggccttc ctgggggtcg ggggctccta gcaccgtctg acaagcgggc agagggccaa 14700 ctccggtcgt cgggggcctc aggccaccgt tcggctcggg ggcctctcct ccctgctctc 14760 tcccgggcca agtcggcaca gggtggggaa gcgcgaaatg agaattatcc tcatcgcgct 14820 ccacaaccaa tgccgcacta actactigcg gggtcgccgc taagtagagt agcaagggct 14880 cgtctggctc cggggcgacc ataactgggg gagagcttag atacgccitc aactgggtga 14940 gggcattttc agcttccttc gtccaggtaa acggtccgga gcgtttgaga agcttaaata 15000 agggtaacgc cttctctccc agcctcgata tgaaccgact tagggcggcc atgcaaccgg 15060 tgacgtattg cacateceta agtitigetgg ggggegeate egetetatag ecegtatett 15120 ctcggggttg gcctcaatgc cccgggcaga gaccaagaac ccgagaagct tgcccgcagg 15180 agtttccgct agatctatga gtaacgtttc ctggttgcgc gtctttacaa ccaagtcatc 15300 gacataagcc tcaatattac gtcctaattg gctaccgaaa gaaattcgag tagtacgttg 15360 aaaagtagga cctgcattct ttaacccgaa gggcattgtc gtataacaat aggttcctat 15420 gggggtaatg aacgcagttt tttcctcatc ctccctagcc atgcgaatct gatggtaacc 15480 agagtatgca totagaaaac acaaaaggto gcaccocgca gtggagtoga caatotgato 15540 tatgcgaggc agggggtaag gatccttagg acatgccttg ttaaggtcgg tgtagtcgat 15600 gcacatccga agcttgccgt tcgccttggg aacgaccacc gggttcgcca gccactcggc 15660 ggggttgacg ctgccatcat attiticggc gatggtgggc cggaaccitg ggggccaacg 15720 gacattccga agactcgcca caaaggctct acagccgaca ccaccaaccg ggggcacgga 15780 gggctgattc ccgcgtccgt gttgaggtga cactctggac gaggaagcgc cctccgttgc 15840 gtgggcagca cttcggtcat tacgccggcg ctcgatgctg gtgcgggcgt ccggccccc 15900 acgcagatet tictgggteg aaggagtega egaaggagtg geggeegaat ggegaacage 15960 ggctgccgct cgtcgtgccc tccgtcttga cgacgcggag ccggtggtag cagcaccaga 16020 tttggccacg tcgtccagcc atcgttgggc tggagactcc gggtcaggga cgacaggcgg 16140 gtgacgtaag agcgcgcccg cagcttggag cgcgccctgg ggcgtgctgc cgtcgccgta 16200 gacgaggagg cgacgctccc catctcgccg ttcttctcca tcgcccgcga tcggtgaagt 16260 cgcggatctt tcgaccctct cgagcgcctc ccccgctta ggactttggc atggagggag 16320 cggtggagta cgagctcgac ggcgtgggtt cggctccccg tcgtcgccac tcacactcgg 16380 agagaggtcg tgcgcctttg cttgctcggc catcaggctg aacaggaaaa gcttggcgca 16440 cacggaagag tacgagagct cagaaaaaca cacactgagt cccctacctg gcgcgccaga 16500 tgacggagcg tggggctcct caccgggaga ccgcgcaggc ccccctttgc cggttcggcc 16560 ggggactcaa ggtgaaattc taagctctct gtatgtggaa ggtttgcgac cgtcgaaaga 16620 gcataagaca cgggcgatgt atacaggttc gggccgctga gaagcgtaat accctactcc 16680

tgtgttttgg gggatctgtg tatgaaggag ctacaaagta tgagccagcc tctcccttgt 16740 gtcctccttt tatatcttaa ggggatacca catgcaccat ctccctcctt tctgtggaga 16860 cttaccctat cttttcataa atggacggag atttgtatag ttgccgtccg aatgaccttc 16920 tgataggacg gcccatacct acctccactt ccgccgaaag caggtgcgac gtgggattat 16980 ggctgtctgc tgacgacatg accagtgtca gactggtcac aaattgctca ttcctgtcca 17040 ccacgcgtca gtttagcaat ctacatgttg gcccttcttc acacaacatc ttgcctgtaa 17100 tggitaggat gaagcctggc atatatctaa ccaggactaa cgtgccatct ctaggaggta 17160 acacgctagc tccagctggg gacgagcgcc tagaaaccct cgtcctgacg ggatggggcg 17220 aggcgtgcgt cagatcgcct gtcgccacct aacccgcgat ctgaccggtc tgtgactggt 17280 cacagaccgg ataaacgagt gcactgcact tcgttacatg cggcgtgaca cgctcagcca 17340 aaccacaata aatgtggtta ggtgagcccc gctgtgctca cctaacccat acacgcggag 17400 caaaaaccca cgaggggtcg gggcgcctcg gccctcgggg ccgaggcggg tgcggtccga 17460 cccctcggg gggactaaga ggagggcgaa cacatcaccc tcgggcccga cgtcccccga 17520 gggtgccagg ccacgtgggc gattgtgtct gcctcaaacc tctagtcatg atactcctga 17580 tcccatgtca ccgacaaggc catccgaatg tattaaggag taaaagttac aagaaaaaac 17640 accataatgc accaatgtgc atgaccacac accatacact acccccaagc acaaaccact 17700 gagggtgaag cctagcacca aacgaccgcc actaagtgtg accaaacgcc gctaggccta 17760 cggcagcaac acatagatga gacttcgaaa acgatgccac caaggtggtc acgacatcta 17820 ggatgctgcc atcgtccatc taaaaagatg tggttttcac ccagagaaac tcatcaagaa 17880 ggggagaggg taacccttga cagcgcccca aggaggttac gacgcccgaa ggcgtagccg 17940 ctgccggtcc ggtgaaccac cggactaggc ttccgcctag gaccctatag ccttgatcgc 18000 agatcaccgt ccaccactca gaaccaccac acagacaaaa ggtagcacgt agcttccacc 18060 acaccgcacc gacgcccctt cgtcggccga ctccatcgaa ccaccatccc tgagagctgg 18120 cccaggaccc ctccgttcca ccacccgccg gccgccttgc cagttttggc caaaggagaa 18180 cccgggactg ggtgacattg cttcggcagc ctgagcttcc cccgctggcg agctgctgtc 18240 tcaatccaac ctagaaactc cccgcaaaag aaggggatga gctctaggaa gggcgagggt 18300 gccgaccggc aacgaggaag acaacccatc gactccagct ccctttgcac taccatctgg 18360 ccctgcgcca atgccggata cgctgtcgct ccggctccgg cgccacccac ctgcaccccc 18420 tttgcctggt ctccgcgccc ctcctggctg cgtcgcgccg cccagctggc cgctaagggc 18480 accgcgacgg ccgcccggct accgaggcct ggccgcgcca tgggacagct cgcgctggca 18540 ccagcgagcc acggccgtcg cgctgttgcc ggcgccagcg agcacaaccg ccagctccaa 18600 gggccgagca tgccactgag ccgccgccgc tgccgcccgg gccggctgca cgtcaccggc 18660 gcacacgacc gcacgccgcc acgctccgcc tccgcgcccg aggcagcccc atgccattgc 18720 cgcgcacctc gcccgcccgc tgccgagccg ccaccgcgca ccttgctgag ccgccaccgc 18780 cgtccctagc cgcctcgtgc cgccgccacg ccagatccag gcgcgggatg gccggatccg 18840 gccttggggg cgccggatcc accgcctccc cacaccgcca cggcgtcacc acctccgacc 18900 gcagtgaggg citcgtcgtt tgccccatcc tcatcgcgtc gaggaggaag acgccaagaa 18960 aaaagggcct cgccgctgcc ttccttgctc gctgccggct tcgccgccgg cgagctccgg 19020 cggcggcgag gtgggggaga agaagtgggg agtgggcagc tagggttttt tcgccccca 19080 agccgccgt gcgagagcga cggtgggggg ggggggact ttccaacctc ttccagtgtt 19140 ctagttctcc acgttatgta actcaatttg tttaaccata gaaagtaaga aacctaccag 19200 cgtgttaagc tetettteat teeetttett etteetggtt ttgetteeat eacatgteaa 19260 gtgaagggtt cttaactacc attactccta cacatctaat ttttttctca gatctttcgc 19320 aggiatatat igatgciaca tittatgate tiaagataat eteeticaea itaeceietg 19380 ctgaaacttt agcttgaacc gtcatcttca ccacaatttg agcccaattt gcacagagca 19440 caacgagcaa tagcttgccc ttacgttcat tatttagcat gaactactac taactaccca 19500 agaatcaata caccggttta ataacgccat tttatcacgt taatatatgt ttcattcaac 19560 acaccggttt tggcacagtt gcaaacttgc aataaattct ttcctacttc tccatcccat 19620 aatataacaa attggtatgt ctcgtctggt actaagttac tatattatga gatggaggga 19680 gcactictti icticcaaaa tataagaata tagtattgga ttagatatta ictagattca 19740 cgaattcgat taggttgtct agatttatag tigiatgiaa tgiataattc ggtaataggt 19800 tattacctct caggatggag ggagtagttt tgactttttt tttcttataa atcgctttga 19860 tttttatatt agtcaaattt tatcgagttt aactaagttt atagaaaaaa attagcaaca 19920 tttaagcacc acactagttt cattaaattt agcatggaat atattttgat aatatatttg 19980 ticigigita aaaaigcigc talaititte talaaacgia gicaaattia aalaagitag 20040 actaaaaaaa atcaaaacga cttataatat gaaatggagg aagtagtaga ctataacaaa 20100 tttaaaccgt gctttgattt tagagcatca ctaatatgtt agcaataatc tatccctaaa 20160

attiattitt titcciaaac tgaaaatagg aagtggaaat actcciccat ciaagagaga 20220 gcctaaattc aataaaaaac taaaaaaacta aaggtggatc cctctattaa actaccgcaa 20280 aaaatttatg tittititci ciiccacgcg cgcagaacag atatcicgat caagttagca 20340 tgtaaaattt ttaaagagat accttatacg actccttccg tatttccaaa agcaaacgga 20400 tttaaaatct gactcaaata aagatctata tatccaattt acatgacaca tgittcgccg 20460 ggatttatca aaacaggatg gacgttgttt ataacagcgt ctagacctag acgcgcttgc 20580 aaactgcggc caccctttta tcacacaaat ttttgacaat ttgacacttt ccaaaaatta 20640 attitataaa ttaaccgtga ccaaaactta tttaaaaaatg atctttttgt tgagcgcaaa 20700 ategtatact teagegeeaa atageaegge geegacetee eeetteeeet eeettetate 20760 ctccactgct gccgcccacc tctccgtatc agctgcgtcg cgttggtttc cgccggcgct 20820 teegegeegg egetgttgge geeetteget eggagggete gacceaaggg egaggggee 20940 gcacgggggg cagtggcgcc gaggacgcac gccacgtgtt cgacgaattg ctccggcgtg 21000 geaggggggc ctegatetae ggettgaact gegeeetege egacgtegeg egteaeagee 21060 ccgcggccgc cgtgtcccgc tacaaccgca tggcccgagc cggcgccgac gaggtaactc 21120 ccaactigig cacctacggc attetcateg gitectgetg eigegegge egetiggace 21180 teggtttege ggeettggge aatgteatta agaagggatt tagagtggat geeategeet 21240 tcactcctct gctcaagggc ctctgtgctg acaagaggac gagcgacgca atggacatag 21300 tgctccgcag aatgacccag cttggctgca taccaaatgt cttctcctac aatattcttc 21360 tcaaggggct gtgtgatgag aacagaagcc aagaagctct cgagctgctc caaatgatgc 21420 ctgatgatgg aggtgactgc ccacctgatg tggtgtcgta taccactgtc atcaatggct 21480 tetteaagga gggggatetg gacaaagett aeggtacata ceatgaaatg etggaeeggg 21540 ggattttacc aaatgitgit acctacaact ctattattgc tgcgttatgc aaggctcaag 21600 ctatggacaa agccatggag gtacttacca gcatggttaa gaatggtgtc atgcctaatt 21660 gcaggacgta taatagtate gtgcatgggt attgctctte agggcageeg aaagaggeta 21720 ttggatttct caaaaagatg cacagtgatg gtgtcgaacc agatgttgtt acttataact 21780 cgctcatgga ttatctttgc aagaacggaa gatgcacgga agctagaaag atgttcgatt 21840 ctatgaccaa gaggggccta aagcctgaaa ttactaccta tggtaccctg cticaggggt 21900

atgctaccaa aggagccctt gttgagatgc atggtctctt ggatttgatg gtacgaaacg 21960 gtatccaccc taatcattat gttttcagca ttctaatatg tgcatacgct aaacaaggga 22020 aagtagatca ggcaatgctt gtgttcagca aaatgaggca gcaaggattg aatccggata 22080 cagtgaccta tggaacagtt ataggcatac tttgcaagtc aggcagagta gaagatgcta 22140 tgcgttattt tgagcagatg atcgatgaaa gactaagccc tggcaacatt gtttataact 22200 ccctaattca tagtctctgt atctttgaca aatgggacaa ggctaaagag ttaattcttg 22260 aaatgttgga tcgaggcatc tgtctggaca ctattttctt taattcaata attgacagtc 22320 attgcaaaga agggagggtt atagaatctg aaaaactctt tgacctgatg gtacgtattg 22380 gtgtgaagcc caatatcatt acgtacagta ctctcatcga tggatattgc ttggcaggta 22440 agatggatga agcaacgaag ttacttgcca gcatggtctc agttggaatg aaacctgatt 22500 gtgttacata taatacttig attaatggct actgtaaaat tagcaggatg gaagatgcgt 22560 tagttctttt tagggagatg gagagcagtg gtgttagtcc tgatattatt acgtataata 22620 taattetgea aggittatti caaaccagaa gaacigeige igeaaaagaa eiciaigieg 22680 ggattaccga aagtggaacg cagcitgaac ttagcacata caacataatc cticatgggc 22740 tttgcaaaaa caatctcact gacgaggcac ttcgaatgtt tcagaaccta tgtttgacgg 22800 atttacaget ggagactagg acttttaaca ttatgattgg tgcattgctt aaagttggca 22860 gaaatgatga agccaaggat ttgtttgcag ctctctcggc taacggttta gtgccagatg 22920 ttaggaccta cagtttaatg gcagaaaatc ttatagagca ggggttgcta gaagaattgg 22980 atgatetatt tettteaatg gaggagaatg getgtaetge caacteeege atgetaaatt 23040 ccattgttag gaaactgtta cagaggggtg atataaccag ggctggcact tacctgttca 23100 tgattgatga gaagcactic tccctcgaag catccactgc ttccttgttt ttagatcttt 23160 tgtctggggg aaaatatcaa gaatatcata ggtttctccc tgaaaaatat aagtccttta 23220 tagaatettt gagetgetga ageetttige agetttigaaa tietgigtig gagttettti 23280 ctcctacagt cgtattagag gagggatett etetttatgt gtaaatageg aggtatgtat 23340 gtcacctctc cgaattattt ttactctggt tcctagacgg taaacaagca attatgttct 23400 gcctttgatg ccagaaaaaa cacaaaagtt tgtcgttatc tctactaacg gatcataaag 23460 gaattigiaa ciggagitic aaacitaatt igictaggca giagitiigg cattagaicc 23520 aacattgtgt aggattcatt tgtgtgtatc aatctatagg gtttcattaa atttcgttta 23580 tgtgtactgt ttaggtgttg aatagtttga cttgtttttt aactgaacaa aagatactga 23640

aatcgttcca ttcaacaaac acatgttccg ttaatgaaat tattgtacgt taccttttgt 23700 tttcttactc acaagtgtcc tcttttctta tatcctatag attggtacaa caaattattg 23760 attcaatttt ggttttgaac attgatgatc ctccctgcac tattggtgca gctgctcttc 23820 tattcatttt gtgaagtgat gtgagtacct ctcaatccca tccttatgct tctgtgcatg 23880 cttcattcca atttttacg catatcgatt gttttctttt atataacagt ccataaagat 23940 aatcacatca tgacaaagtt atttatttct acagtatagt tatataagta ticaccagtt 24000 ttccatgaat attttggcat gtgattacaa agaagattat ttgagaaaat ccatgctttt 24060 atticateat titgitigaa giigaaciit aaittaiggi giaaattica giiattaiig 24120 ctagcagete gtactettta atggtataae tteaettgtg ettattetee aatateteee 24180 ttcttgttgt tcaggttcaa gaaaatcatt tgttggattc agaatctggt gtccattttc 24240 ttettaaatt attaaateet eeagtgaate ttgttgatte caaageacea tegataggtt 24300 ccaaacttct tggaatcagt aaagttcaaa tgcttaatgg atcaaataag gattctgact 24360 gcatttcaga ggaaatcctt tcaaaagttg aagagattct cttaagctgt caagtgatca 24420 agtcgctcga caaagatgac aagaaaacaa caaggccaga actgtgtcca aagtggcttg 24480 ctttgttgac aatggaaaat gcatgcttgt ctgctgtttc agtagagggt aagttttaat 24540 caaatttctt ggtcatgatt tccctttatg accattatat ttatttatat gagccaaata 24600 agcagtigic aactigicat aagitacata gcacciatti gcaatatica tgggtggtit 24660 gcttagccct tttcttcacc tgcttttgat tgatgacttc catctgtgtt gcagaattga 24720 attggagtag tggactgcac tagaagcacc tatggccatt gtcatactag gaaggttttc 24780 ccttatcaaa tatttgattg ttacagagac ttctgacaca gtgtccagag ttggaggaaa 24840 ttttaaagag acattaaggg agatgggagg tcttgatagt atttttgacg ttatggtgga 24900 ttttcattca acattggaga tgagatctcg ctaacatcgc atattttaca tttcctttgt 24960 tcaactctaa tagattgtgc aggcttgttc cttttcgcca ttttagcttt aatgcgcttg 25020 aagccacatg aaagtaatgc ttgtccagat acatagccaa aggttgttat attttggggc 25080 atggaaaatg cttgaggtag taactatttt catcaggaca tggaaaattg gctgcaacac 25140 aaattatgtt gttttatgtt gcaaaaatag ttttttaata ctttttatt ctgcatgtgg 25200 tgttagtate ttacagitee tetgatgatt atatececca egataataac acitgaaacg 25260 ataataacac tigacatato tacaccaagi gaacattati cattiggaig tiactitico 25320 agctatactt gctgttcttg catgtgtaag caagtttgga gtaaattgcg cattaattta 25380

aatgettggt gtteetatet gtgtaetttt tatteeceaa etaataatge aateatatta 25440 cgctgataaa ctgaataaat aaattaacaa tatacttctg gtggcaaacc ttgtgtatca 25500 gaateteata aaggataeat eeactteage tttggaeega aatgaaggaa eatetttgea 25560 aagtgctgct ctcctcttga aatgtttgaa aatattggaa aatgccatat ttctaagcga 25620 tgataacaag gtaatgctcc ttatatgttc tgtttcagtt tagtacccat ttccttct 25680 tgtactatct tctctcctga tttgttctgt gcaaaatgtg caaacagtgc gactttgtat 25740 gtctgcttaa caattttctt ttcttcctga aaaagcaata tgaactctta cattcatttt 25800 gcttcttgca gacccatttg cttaatatga gtagaaaatt gaacccgaaa cgctccttgc 25860 tttcttttgt tggtgtcatt atcaatacta ttgagttatt atcaggtatt tttcttaata 25920 atacaatgtg ttcgctaaca caataaaatg ttttaaacat ccagtatgtt aaagttgcag 25980 tctgacgcct attttgtttt gctgcagctc tttcaatact tcagaattct tctgttgttt 26040 ccagctctac atatccgaaa tcgtctaaag tctctcaaca gagttactct ggtaataaca 26100 aacaccaatt tigitigatc agitgatete gitggetitt etaigeacig teleaatata 26160 gtttggtcgc cattcaagtc tcactacaga tgttgaactt ggcctgacac caaatattta 26220 taaaatgcta cctgatattt ttaatatttc atgtttcctg acccagatta tcttgttggt 26280 tcctcgtata agtitaatta gtgacattct tgaagctttg ttatgcagca gatgtcatgg 26340 ggggaacttc atttaatgat ggaaagagca agaactcgaa aaaaaaaaac ttttgtcgaa 26400 ccagacacgt cattgttgct tatcttcaaa atcagaagtt tctcatatta ctatatcttc 26460 tggtagtgat gctggtctgt cacagaaggc attcaattgt tctccattta tatcaagcaa 26520 tggggcatca agtggttcat taggcgagag gcacagcaat ggtagtggtt tgaagttgaa 26580 tataaaaaag gatcgtggca atgcaaatcc aattagaggc tcaactggat ggatttcaat 26640 aagagcgcac agttctgatg ggaactccag agaaatggca aaaagactcc gtctatctta 26700 aaatgtaatc accgacagtg gtggtggtga tgaccctttt gcatttgacc gccgcgtcgg 26760 cgtcgccacc acgtaatcgc ccacgtcgct gccccgctg ccacgtcgtc gaccgcgcac 26820 ggtaatcaca cgcatctcga ggccgccgct agctgatatc ttctcatccg gttgatttgt 26880 gattttggcg tttttgcagt ggtgatggcg gggggcgacc gtggccgagg cgtggagtgc 26940 catccgcatc agggtgtatc ggccgcgctg ctccgccctg gtccgcaggc tttggcggcg 27000 agctggcggc ggagggagac tgtggtgaga tcggatttcg ccgctggtgg tgtcgctacc 27060 atgggggatt cgccgcaggc gctctcaggt ttgcagcctc ctccactctc ttcccttttt 27120

attaatgtag titgciggaa cattiacati iggaacgtig tiggcaatig ciitacaaaa 27240 tgtggaattg tggaggggag aaaaatcatt tgaacctgca gtgacaaaat tgccatctct 27300 aattttaaaa ctgaaggtgt ggaaatcaaa cataatcatt gccagcgcat cattcttgtt 27360 aaccaccatg atatattgtt ggttataaca gttagctcca caccaacctt gaaggtgtca 27420 atagaatgtt tagtataaat tgaggagaac aggcagttgt taagactttc taaagaactt 27480 gtagcagcta atactagcta tigigcatti gigiticaig gaattigagc agcaatggat 27540 attictiact aagatgiatg atgcaaaaca aaaaactatg tctatacagi ttacatgiaa 27600 tgtgcggatg caaataaaat catgtacatg gacaaactca tgggattcat accgaattcc 27660 agaattgcat ttcttatgtg gttacttttg ttgttgattt ggttaccaga catcgatgtg 27720 atticaaggg tcagaggggt itgcttctac gcggtggctg cagttgcagc aatctttttg 27780 tttgtcgcca tggttgtggt tcatccactt gtgctcctat ttgaccgata ccggaggaga 27840 gttcaggaaa aaaatttgaa aatacccatt ttttgaaaaaa gatttacgtt tatatacact 27900 agtatgaaga attigcgaaa atataactaa teegeagate ggtiatgegg gagegeaaca 27960 aaagtatggc gtggcggcgc ggagtggacg gccgaggcgt tcgcgcggaa tggggctgcg 28020 ggaccgagcc agtctcgctt gccggtaacg cggaaccggt acgctcccgc agcgccagtg 28080 tgcggaaccg cggcgccaac attttttac tgcatggcac tgtgtttaat actgtttgac 28140 actgtttctg gtactgtttt acacagttcc cgggtcagtt ccgcacaatg gaggcgcggc 28200 accgaccatg aacaatgtgt gaacagtgct gcacagggtt aaaacagtgt ataaactgcg 28260 ctgcacagtg ctggagtcgc tggccactgc ggttccgcgt tttggaaccg cgggaccgtc 28320 gcgattccgc gttttggagc tgccggacca tgacggttcc gcgcaggatc gtcggtcccg 28380 tattttgaat ctgcggaacc gtcgctgtcc cgcgtttcca tttcgcggga tgcgtatatt 28440 tttataaaac ctctccatgc atgtatataa acataaatta ttgaaaaaat aagtatattt 28500 gcaaattttt ttcgagagct cagcactaca ttgcaaagat ttgggcaact ctgacaattt 28560 ccatgitcta caagciigac gicgagggaa iggagaacci gccaccgaai agiagcccig 28620 ctatctatgt tgcgaaccat cagagiitti tggataicta taccciicta acictaggaa 28680 ggtgtttcaa gtttataagc aagacaagta tatttatgtt ccgaattatt tgatgggcaa 28740 tgtatctctt aggagtaatt ccttigcggc gtatggacag caggagccag ciggtatggc 28800 tgtagtctca tccctgcttt cttaagtaga catatatgca attacagaat ttggtaaaca 28860

aacaagatti taigaatcai ataigattii ggggaaaaca ccaaacicic tiiggiggci 28920 gccttgaaca tagttctatt cacacagtta tagcaccttc tttaaaaatga agaactttgt 28980 tgcatacaca tatggccaaa ccacataatg aattitgitt attictatci tigaatgita 29040 gcaccttatt ticatgcata tcatgctaat ttgcttgccc acgttgagtg ggaatttttt 29100 tccatgtttt ataatttata tatgttctag acttctagtc cacaatttat ctacttcatg 29160 ttcctgagcc tctagtatgg ctggtagcag actaggtgct gagtgctgtc catttttgca 29220 gactgaagag aggagaaata caggactgtc cgttgttagt cagatttgta aaaatagact 29280 ctgatgtagt ttattttagc ccctatttta tatttaacaa tacaaatata taacgtatcc 29340 taagaactta tcgtaattta ggagaagttg ctcgtttcat taaattaaac tgtgaagtaa 29400 aaatgtgtgc tcgagtctgt caatgcaatc ctgtgttctt gtttgaagat atggtgtagg 29460 gcaggctagg atcgaacact gaatggtaag actgcttctg ccttcatttg tgcacttggt 29520 gctgccacgc cgattaagca gtagaacaaa gtaattttgt cgtgcacaaa tgagttatat 29580 ttcattgaaa atcgaagtga aaatgaacca aaagatagaa gaaaagggga aacttggtaa 29640 ttatatactc cacaaattta ttggtaagat ttgatattag acgctcgatt acttggctta 29700 agttaaggat atcaaatttg gggaagcacc aaaggaatta ttgtgaagga gttgtgggtg 29760 gatttattgt taattttagt tictttaaga tigigiccga giacaccatt cggtaagigt 29880 aataatgttt tgtattggat tcacttgtgt tacgtgcatg tgcttttacc ttttcatttg 29940 tttctgcgtt ctgggtatga atttgacgag attccatggt cagctcaaca tatcagttac 30000 tgcgtgtcaa gcgatcttat atggtatgcg cacaagcgat tgtatacgga tatgacagta 30060 taatgigiga tattgatacg atgiteetti eetitataaa ggaacaaaga ettittitaa 30120 aaaaagaagg ggtattacta aaaaccaaaa tgtcaaaaac aaaatatcag tgcacatggc 30180 aagtgtgcac gagcaatagc ttgcccttac gttcattatt tagcatgtac tactactaac 30240 tacgcaaaaa tcaattcacc gattattaaa ctgttaacat cattttagca cgttaacata 30300 tgtttcattc aacacacgg ttttggcaca tttacaaact tgcaaagttg caatactccc 30360 ttcgttacat agcataagag attttaggtg aatgtgacac atctatccaa attcattata 30420 ctagaatgta tcaccgcctc cacgccggga gggagagcgc cgccggtgga gaaaggggga 30480 gggagtggtc gaggggaacc agtagggtgc cctccccgtc gccgcctccc cgtggccgcg 30540 ccggcgagac aggaggaaga gggggagatg gagcggcgcc gccggtgagg gcgcgcgtgc 30600

gcgggggggg gggggggga gcggcgacgc cggtgaggaa gggaagggga gtggtggctt 30660 tgagagagat aggggagag gaaaatgatt ttagagttag ggtttgggct gctgagttit 30720 tatatagatc gggatcaatc aggaccgtcc atcagatcgg acaactacgg titctcccgc 30780 gttgggccgg gtgccactcc taggttgccc acactattgg gccacatgta cgctccgcgt 30840 gaaataagit cactitaggi ccittaagit gccicigaat igitcccagg ccggccgcac 30900 tattgggcca ccccataggc catgtgtacg ctccgcacag aataatttcg ctttagctcc 30960 cttaatttgt cccctcaaac ttctaaaacc agtgcaaatc tttaattttt agttcaccca 31020 ttgcaactca cgggcatatt tgctagtgac atataatatg aaacgaagga tgtagcagac 31080 tatagaattt aaactgtgct ttcattttag agcatcacta actgttattt agatttttat 31140 ttaaataaat gcagaaatga tgttttatt atgaaaatta gcaataaagc tcccaaaatt 31200 tcaaaaaaaa attaaaagag atttattaat catggttaat ttaattaaaa attaaatcta 31260 accatateat attattteae ggteegtgat gaggaaatgg eagetgetat eacttatggt 31320 gggagagaag gggcattgtt tatttttata actatctctt ataactccca tgaaactata 31380 aaataaatat aatcattatc ataacattag tttttttcca ttgcaacgca agggtaattt 31440 ttcagtacaa taaaaaaata aaagtgggcc attctgaacg gaaatttctg gttttttttc 31500 ccaagagege egeacacaac tgegeaagag ategategeg ateaceetge tegtegeega 31560 tetectacae catecetgee atetectice ectecaetgg etgetgetge acetgteage 31620 tagggcggc atggcgccc gcgccgcttc ccgcgctgct ggcgcccttc gctcggaggg 31680 ctcgatccaa gggcgagggg gccgcgcggg gggcagtggc ggtggcgcgg aggacgcacg 31740 ccacgigite gacgaatige teegiegigg cataceagat gietieteet acaatatiet 31800 tctcaacggg ctgtgtgatg agaacagaag ccaagaagct ctcgagctac tgcacataat 31860 ggctgatgat ggaggtgact gcccacctga tgtggtgtcg tacagcaccg tcatcaatgg 31920 cticticaag gagggggatc iggacaaaac itacagtaca tacaaigaaa igciigacca 31980 gaggatticg ccaaatgitg tgacctacaa cictattatt gctgcgctat gcaaggctca 32040 aactgtggac aaggccatgg aggtacttac caccatggtt aagagtggtg tcatgcctga 32100 ttgcatgaca tataatagta ttgtgcatgg gttttgctct tcagggcagc cgaaagaggc 32160 tattgtattt ctcaaaaaga tgcgcagtga tggtgtcgaa ccagatgttg ttacttataa 32220 ctcgctcatg gattatctti gcaagaacgg aagatgcacg gaagcaagaa agatttttga 32280 tictatgace aagaggggee taaageeiga aattactace taiggtacee igeticaggg 32340

gtatgctacc aaaggagccc ttgttgagat gcatggtctc ttggatttga tggtacgaaa 32400 cggtatccac cctaatcatt atgttttcag cattctagta tgtgcatacg ctaaacaaga 32460 gaaagtagaa gaggcaatgc ttgtgttcag caaaatgagg cagcaaggat tgaatccgaa 32520 tgcagtgacg tatggagcag ttataggcat actttgcaag tcaggcagag tagaagatgc 32580 tatgetttat titgageaga igategatga aggaetaage eetggeaaca tigittataa 32640 ctccctaatt catggtttgt gcacctgtaa caaatgggag agagctgaag agttaattct 32700 tgaaatgttg gatcgaggca tctgtctgaa cactattttc tttaattcaa taattgacag 32760 tcattgcaaa gaagggaggg ttatagaatc tgaaaaactc tttgacctga tggtacgtat 32820 tggtgtgaag cccgatatca ttacgtacag tactctcatc gatggatatt gcttggcagg 32880 taagatggat gaagcaacga agttacttgc cagcatggtc tcagttggaa tgaaacctga 32940 ttgtgttaca tatagtactt tgattaatgg ctactgtaaa attagcagga tgaaagatgc 33000 gttagttctt tttagggaga tggagagcag tggtgttagt cctgatatta ttacgtataa 33060 tataattetg caaggittat itcaaaccag aagaaciget geigeaaaag aacietaigi 33120 cgggattacc aaaagtggaa ggcagcttga acttagcaca tacaacataa tccttcatgg 33180 actttgcaaa aacaaactca ctgatgatgc acttcggatg tttcagaacc tatgtttgat 33240 ggatttgaag cttgaggcta ggactttcaa cattatgatt gatgcattgc ttaaagttgg 33300 cagaaatgat gaagccaagg attigtitgt tgctttctcg tctaacggtt tagtgccgaa 33360 ttattggacg tacaggttga tggctgaaaa tattatagga caggggttgc tagaagaatt 33420 ggatcaactc tttctttcaa tggaggacaa tggctgtact gttgactctg gcatgctaaa 33480 tttcattgtt agggaactgt tgcagagagg tgagataacc agggctggca cttacctttc 33540 catgattgat gagaagcact tttccctcga agcatccact gcttccttgt ttatagatct 33600 tttgtctggg ggaaaatatc aagaatatca tagatttctc cctgaaaaat acaagtcctt 33660 tatagaatet tigagetget gaageatitt geagetitga aatteigigt iggaatiett 33720 ttctcctaca gtccgattag aggagggatc ttctctgtat gtgtaaatag cgaggtatgt 33780 atgicacete teegaattat titgaetgig giteetggae igtaaacaag etaitaiett 33840 ctggtgttga tgccagaaaa aacacaaaag tttgtcgtta tctctactaa cggatcataa 33900 aggggttigt aaciggagit icaaacitaa ggiaiciagg cagtaggiai ataiigaicc 33960 tacatcttat gatcttaaga tgatatcctt ctcattatcc tctgctgaaa ctttagcttg 34020 aaccgtcatc tacaccacaa tttgagcccc ttagcacaga gcacaacgag caatagcttg 34080

cccttacgtt cattatttag catgcactac tactaactac ccaataatca atacatcggt 34140 tattaaactg tiigtacagi itaataaigi caliitatca cgitaacata igiitcaiic 34200 aacaccacac cggttttggc acagttgcaa acttgcaata acatttttac tacttctccg 34260 ccccataata taacaatctc gttccatact atattgctat attacaggat ggatgaagta 34320 cttcttttct tccaaaatat aagaatctag tactagatta gatattattt ggattcacga 34380 attigattag getgtetaga titgtagieg tatgtaatgt etaatteggt aataggitat 34440 tacctctttg gatggaggga gtagttttta tttcgtactc cctccgtttc atattataag 34500 tigititgac tititicita gicaaattii atigagitig attaaattia tagaaaaaaa 34560 ttagcaacat ttaagcacca cattagttic attaaatgta gcatggaata tattttata 34620 atatgtttgt tttttattaa aatgctacta tatttttcta taaatgtagt caaatttaaa 34680 gaagtttgat tatgaaaaaa tcaaaatgac atataatatg aaactgagga tgtagcagac 34740 tatagcaaat ttaaactatg cittiatitt agagcatcac caaaagatta gcaataatti 34800 atccctaaaa ttcaagtttt gggtttctta aactgaaaat aggaagtgaa aaatcttttc 34860 cgtccaagag atagcctaaa tcttatctta actaattaaa atattcataa ttttcctttc 34920 gtcacattaa attitcgtcc gtaaatctga ttgaaatcca attggacaat ccaaaaaaata 34980 gagaaaaaga acagaaaaaa taataaaaag cacacaaatc ttatctcaat cccgcgggaa 35040 gctgccgacg ccgccgaatc cgctcgagcg ccgccgccgc cgctcacggg gaacgatgtc 35100 gctgctgtcg cacgcggtat gggagggcgc cgctgccact gcttgggaga taggatatgg 35160 agagagaagg aaatgtgagg gttagggtta ggtttttccc cgtccgtatc ttcagcgaca 35220 eggaggegat ceaagetgte cateagateg gaeggeteag aatgeeteea tegtegggee 35280 gcgcatgctt gatgggccga gggaaggccg gagggtcgaa caaacgcaat caaaggagga 35340 gtiggaggag gtaaattaga attiattigc gggcigagat agtaaatgga cigaaaatgg 35400 cccatagaga aattgggaat tttatttaaa taaatgttga aaaggtgttt atattatcaa 35460 aattaaaaat taageteega aaattetaaa aaatatteaa agageattat taateatggt 35520 taatttaata aaaattaaat ccaaccatat catattattt cacggcgcgc ggtaggaaaa 35580 tgcgcagctg ttgtcgttta cggtgggaga gaagggacat tgtttatttc cagaactatc 35640 ttttataact cccatggaac tttaaaataa atataatcat tattatagca ttagttittt 35700 tetgtetttt titteeccaa gagegeegeg cagaagagat egategegat eteectgeec 35760 cgacgtcgcc ggccgatctc tcattctctc cacgccctgc tcgtcgccga tctcctacac 35820

)

catecetgee atetectect teceetece tetatectee aetggtgeeg eccacetete 35880 cgtataagac aaactgcgtt gcggcgttgg tttccgccgg cgctgctgct gcacctgtca 35940 gctagggcag gcatggcgcg ccgcgccgct tcccgcgctg ttggcgccct tcgctcggac 36000 ggctcgatcc aagggcgagg aggccgcgcg gggggcagtg gcgccgagga cgcacgccac 36060 gtgttcgagg aattgctccg gcgtggcagg ggcgcctcga tctacggctt gaaccgcgcc 36120 ctcgccgacg tcgcgcgtca cagccccgcg gccgccgtgt cccgctacaa ccgcatggcc 36180 cgagccggcg ccggcaaggt aactcccacc gtgcacacct atggcattct catcggttgc 36240 tgctgccgcg cgggccgctt ggacctcggt ttcgcggcct tgggcaatgt cgtcaagaag 36300 ggatttagag tggaagccat caccttcact cctctgctca agggcctctg tgccgacaag 36360 aggacgagcg acgcaatgga catagtgctc cgcagaatga ccgagctcag ctgcatgcca 36420 gatgttttct cctgcaccat tcttctcaag ggtctgtgtg atgagaacag aagccaagaa 36480 gctctcgagc tgctgcacat gatggctgat gatcgaggag gaggtagcgc acctgatgtg 36540 gtgtcgtata ccactgtcat caatggcttc ttcaaagagg gggattcaga caaagcttac 36600 agtacatacc atgaaatgct tgatcggagg atttcaccag atgttgtgac ttacagctct 36660 attattgctg cgttatgcaa gggtcaagct atggacaaag ccatggaggt acttaccacg 36720 atggttaaga atggtgtcat gcctaattgc atgacatata atagtattct gcatggatat 36780 tgctcttcag agcagccgaa agaggctatt ggatttctca aaaagatgcg cagtgatggt 36840 gtcgaaccag atgttgttac ttataactcg ctcatggatt atctttgcaa gaacggaaga 36900 tccaccgaag ctagaaagat ttttgattct atgaccaaga ggggcctaga gcctgatatt 36960 gctacctatt gtaccctgct tcaggggtat gctaccaaag gagcccttgt tgagatgcat 37020 gctctcttgg atttgatggt acgaaacggc atccaccctg atcatcatgt attcaacatt 37080 ctaatatgtg catacgctaa acaagagaaa gtagatgagg caatgcttgt attcagcaaa 37140 atgaggcagc atggattgaa tccgaatgta gtgacgtatg gagcagttat aggcatactt 37200 tgcaagtcag gcagtgtaga cgatgctatg ctttattttg agcagatgat cgatgaagga 37260 ctaaccccta acattatigi giataccicc ctaaticata gictcigiai citigacaaa 37320 tgggacaagg ctgaagagtt aattettgaa atgttggate gaggeatetg tetgaacaet 37380 attitettia atteaataat teacagicat igeaaagaag ggagggitat agaateigaa 37440 aaactctttg acctgatggt acgtattggt gtgaagccca atgtcattac gtacagtact 37500 ctcatcgatg gatattgctt ggcaggtaag atggatgaag caacgaagtt actctccagc 37560

)

atgiteteag tiggaatgaa acetgatigi gitacatata ataetitgat taatggetae 37620 tgtagagtta gcaggatgga tgacgcatta gctcttttca aagagatggt gagcagtggt 37680 gttagtccta atattattac gtataacata attctgcaag gtttatttca taccagaaga 37740 actgctgctg caaaagaact ctatgtcggg attaccaaaa gtggaacgca gcttgaactt 37800 agcacataca acataateet teatgggett tgeaaaaaca ateteaetga egaggeaett 37860 cgaatgittc agaacctatg titgacggat itacagcigg agactaggac tittaacati 37920 atgattggtg cattgcttaa agttggcaga aatgatgaag ccaaggattt gtttgcagct 37980 ctctcggcta acggtttagt gccagatgtt aggacctaca gtttaatggc agaaaatctt 38040 atagagcagg ggttgctaga agaattggat gatctatttc tttcaatgga ggagaatggc 38100 tgtactgcca actcccgcat gctaaattcc attgttagga aactgttaca gaggggtgat 38160 ataaccaggg ctggcactta cctttccatg attgatgaga agcacttttc cctcgaagca 38220 tccactgctt ccttgttata gatcttttgt ctgggggaaa atatcaagaa tatcatagat 38280 ttctccctga aaaatacaag tcctttatag aatctttgag ctgctgaagc attttgcagc 38340. tttgaaattc tgtgttggaa ttcttttctc ctacagtccg attagaggag ggatcttctc 38400 tgtatgtgta aatagcgagg tatgtatgtc acctctccga attattttga ctgtggttcc 38460 tggactgtaa acaagctatt atcttctggt gttgatgcca gaaaaaacac aaaagtttgt 38520 cgttatctct actaacggat cataaagggg tttgtaactg gagtttcaaa cttaaggtat 38580 ctaggcagta gttttgacat tagatccaac attgtgtagt attcatttgt gtgtatcaat 38640 ctatagggtt tcattaaatt tcatttgtgt actgtttagg tgttgaatat attgttttac 38700 ttgtttttta actgaacaaa agatagctga agctttgttc tttaccaaat gcagtagtga 38760 tcatcacaat atatttttt acggaacagg agattgtata aaatggtttc catcggcggc 38820 caacggcgac cgctctgctc tgacccacca cccaatccat ccatccactc gccgccgccc 38880 ctgatccaag cctccgccgc gcgacagcga cgcaccgccg tcgagaggag gaggcgtgag 38940 ccccatgggg accetectee ggccgcgtaa tgccgctgca cggtaaccae gcgccteteg 39000 aggeoteege egetagetga tetettetea teetgttigg gittgggtit gigattiggg 39060 tgttttttcc gcagcggtgg tggtggtggt ggttgcggcg ggagggggcg gtggccgcgg 39120 ccgtggcgtg gagtgccagc tgcatcgggt gcaccgccgc cggggtccgc aggttgtggt 39180 ggcgacggcg agctgaggag gcggagggag actggtgagg gacacaggca ggcaggctct 39240 caaggetaag ettgttacag gtactgagae tagttactaa ttactttgat aatcagtata 39300

)

aataagettg tgtagtgtaa tggeattgtg catitetgea ettgtaaatt itacagaaga 39360 tggtcattca attigaacci gcatctaata tittagtggt tigagtttat tctcccagtc 39420 acagagttga agaggcaagt aacctgtaag agaggactga acattaacac ctcttgttcg 39480 attaaaaatg accaaagagc atcaaacatg tattcgaggc tgttacttta atatggccca 39540 ttaatttgtt tagttggcta tgtacatcct agttggtgca gtgttgtgga aaacggaata 39600 cgggtgtcgg atggacgagg tgccgtcaag cgattaatcg taatacggat gattaaacgg 39660 aattatatgg atttttggcg ttcgcactaa gatgtacata attgatgtta atggcaatgg 39720 tggagacaaa atgcatcatc ttaataaaaa atatttgtat aaatctctaa ctatattatg 39780 aaaatgccat ttattagtic aatagatatc aacactgatg gttagtagcg caatagcatt 39840 gggcttgtta gtcaaaatag tgcagctggg ctgcaagttg caagittatg ttagtttcat 39900 aaacagacat cigatiigic gataaataac cgactaatcg igccatacaa cigiataatt 39960 actictgaaat agtaatgitg ciccgactig atgatacggt acggictggc taccgitticc 40020 gttttgacag acgattaaac ggctgtgccg gtcgacttcc acaacactga gttggtgtaa 40080 atgccagtta ccattictat gatctaaaat aatcaactct titagtatat titcaaaaac 40140 gaaaattcag tacacatgca tgaatcttaa tcttcatatc tagctcgtta caaaatcaac 40200 aaaggcaccg tgtcagctgg tgcacattag ctagttcgta cttagcatta tccactagca 40260 ccttattttc atgcatatca tgctaatttg cttgcccacg ttgagtggga attittttcc 40320 atgittiata attiatatat gitciagaci iciacitcai gitccigage cictagiatg 40380 gctggtagca gactaggtgc tgaatgctgt ccttttttgc agactgaaga gaggagaaat 40440 acaagactgt ccgttgttag tcagatttgt aaaaatagac actgatgtag tttatttttg 40500 cccctatttt atatttaaca atacaaatat ataacgtatc ctaagaattt atcgtaattt 40560 aggagaagtt gctcgtttca ttaaattaaa ttgggaagta aaaatgtgtg ctcgagtatg 40620 tcaatgcaat cctgtgttct tgtttgaaga tatggtgtag ggcaggccag gattgaacac 40680 tgaatggtaa gactgcttct gctttcagac gttattgcta aatttttagc tagttgcaat 40740 tagtgctgtc acgccgatta agcagtagaa caaagtaatt tigtcgtgac aaatgagtta 40800 tatitcitig aaaatcgaag cgaaaacgaa ccaaaagata gaagaaaagg gaaactiggt 40860 aattactcca caaagagaac aaattiatig giaagattig ataigagaig cicgattact 40920 tggcttaagt taacaatatc aaatttgggg aagcaccaaa agaattatig tgacttaagt 40980 taaagatatc aaattigggg aagcaccaaa ggaattatig igaiggagii gigggigcai 41040

aacgitatti gcitigiica aatcciagig aciaigaata igaatattaa igcgiaaggi 41100 aaggaattta ttgttaattt taggttcttt acgattgtgt ccggggacgc cattcggtaa 41160 ctgtaataat gttttgtait ggattcactt gtgttacatg cacgcactaa acatgtgctt 41220 tacctitica titgitigig cgitcigcgi tigaatiiga cgagaticca iggicagcic 41280 aacatgicag tiacigcgig icaagcagii acigcgigic aagcgaicti atatggiaig 41340 cgcacaagcg attgtatacg gatatgacag tataacgtgt gatattgatt tttttatata 41400 aaaaaatacg atgttacttt ccttcataaa ggaacaaaga ctttttttt aaaaaaaaga 41460 aggggtatta ctaaaaacaa aaatgtcaaa aacaaaatat cagtgcacat ggcaagtgtg 41520 ctcggcaatt ttttgtctgt actttaaaca aaaatatttc tatatggtat tttttacaag 41580 ggtgtcacaa atattttaaa ttagccaaac atctgcattt tattaaaaac tgtataaatt 41640 ataatttata ctctaaaagg tigtgtacat ctctcttgga gaaaatgtat aagttgcgaa 41700 caaacattaa teeaegttat ataagteaat etgttattta accatagaaa gtaagaaace 41760 tactagcgtg ttaagctaag ctctctttca ttctctttct tcttcctggt tttgcttcaa 41820 tcacttgtca agtgaagggt tcttaactac cattactcct actcaccaaa tttttttctc 41880 agatettieg taggtatata tigatectae atettatgat ettaagatga tateettete 41940 attatectet getgaaaett tagettgaae egteatetae accaeaattt gageeeetta 42000 gcacagagca caacgagcaa tagcttgccc ttacgttcat tatttagcat gcactactac 42060 taactaccca ataatcaata catcggttat taaactgttt gtacagttta ataatgtcat 42120 tttatcacgt taacatatgt ttcattcaac accacacgg ttttggcaca gttgcaaact 42180 tgcaataaca ttittactac ticiccacce cataatataa caatetegti eeatactaga 42240 ttgctatatt acgggacgga tgaagtactt ctttccttcc aaaatataag aatatagtac 42300 tagattagat attattigga ticacgaatt igattagget atctagatti gtagtegtae 42360 gtaatgicta attoggtaat aggitattac ctctttggat ggagggagta gittitatit 42420 cgtactccct ccgtttcata ttataagttg ttttgacttt tttcttagtc aaattttatt 42480 gagittgact aaatitatag aaaaaaatta gcaacattia agcaccacat tagittcatt 42540 aaatgtagca tggaatatat ititataata igititgiiit ittatiaaaa igciactata 42600 tttttctata aatgtagcca aatttaaaga agtttgatta cgaaaaaaaa tcaaaatgac 42660 atataatatg aaactgagga igiagcagac tatagcaaat ttaaactaig ciittattii 42720 agagcatcac caaaagatta gcaataatti atccctaaaa ticaagitti gggttictta 42780

actaattaaa atatteataa ttiteettie gicacattaa attitegiee giaaateega 42900 ttgaaatcca attggacaat ccaaaaaata gagaaaaaga acagaaaaaa taataaaaag 42960 cacacaaatc ttatctcaat cccgcgggaa gctgccgacg ccgccgaatc cgctcgagcg 43020 ccgccgccgc cgccgccgct cacggggaac gatgtcgctg ctgtcgcacg cggtatggga 43080 gttaggtttt tccccatccg tatcttcagc gacacggagg cgatccaagc tgtccatcag 43200 ateggaegge teagaaegee teeategtea ggeegegeat gettgatggg eegagggaag 43260 gccggagggt cgaacaaacg cagtcagagg aggagttgga ggaggtaaag tagaatttat 43320 ttgcgggctg agatagtaaa tggactgaaa atggcccata gagaaattgg gaattttatt 43380 taaataaatg tigaaaaggi giitatatta tcaaaattag aaattaagci ccgaaaatti 43440 taaaaaatat tcaaagagca ttattaatca tgattaattt aataaaaatt aaatccaacc 43500 atatcatatt atttcacggc gcacggtagg aaaatgcgca gctgttgtcg ctgacggtgg 43560 gagagaaggg acattgttta tttccagaac tatcttttat aactcccatg gaactttaaa 43620 ataaatataa tcattattat agcattagtt tttttctgtc tttttttcc ccaagagcgc 43680 cgcgcagaag agatcgatcg cgatctccct gcccgacgt cgccggccga tctctcattc 43740 tctccacgcc ctgctcgtcg ccgatctcct acaccatccc tgccatctcc tccttcccct 43800 cccctctatc ctccactggt gccgcccacc tctccgtata agacaaactg cgttgcggcg 43860 cgcttcccgc gctgttggcg cccttcgctc ggacggctcg atccaagggc gaggaggccg 43980 cgcggggggc agtggcgccg aggacgcacg ccacgtgttc gacgaattgc tccgccgtgg 44040 caggggcgcc tcgatctacg gcttgaaccg cgccctcgcc gacgtcgcgc gtgacagccc 44100 cgcggccgcc gtgtcccgct acaaccgcat ggcccgagcc ggcgccgacg aggtaactcc 44160 cgacttgtgc acctacggca tictcatcgg ttgctgctgc cgcgcgggcc gcttggacct 44220 cggtttcgcg gccttgggca atgtcattaa gaagggattt agagtggacg ccatcgcctt 44280 cactcctctg ctcaagggcc tctgtgccga caagaggacg agcgacgcaa tggacatagt 44340 gctccgcaga atgaccgagc tcggctgcat accaaatgtc ttctcctaca atattcttct 44400 caaggggctg tgtgatgaga acagaagcca agaagctctc gagctgctgc acatgatggc 44460 tgatgatcga ggaggaggta gcccacctga tgtggtgtcg tataccactg tcatcaatgg 44520

cttcttcaaa gagggggatt cagacaaagc ttacagtaca taccatgaaa tgctggaccg 44580 ggggattita cctgatgttg tgacctacaa ctctattatt gctgcgttat gcaaggctca 44640 agctatggac aaagccatgg aggtacttaa caccatggtt aagaatggtg tcatgcctga 44700 ttgcatgaca tataatagta ttctgcatgg atattgctct tcagggcagc cgaaagaggc 44760 tattggattt cicaaaaaga tgcgcagtga tggtgtcgaa ccagatgttg ttacttatag 44820 ctigctcatg gattatcttt gcaagaacgg aagatgcatg gaagctagaa agattttcga 44880 ttctatgacc aagaggggcc taaagcctga aattactacc tatggtaccc tgcttcaggg 44940 gtatgctacc aaaggagccc ttgttgagat gcatggtctc ttggatttga tggtacgaaa 45000 cggtatccac cctgatcatt atgttttcag cattctaata tgtgcatacg ctaaacaagg 45060 gaaagtagat caggcaatgc ttgtgttcag caaaatgagg cagcaaggat tgaatccgaa 45120 tgcagtgacg tatggagcag ttataggcat actttgcaag tcaggcagag tagaagatgc 45180 tatgctttat tttgagcaga tgatcgatga aggactaagc cctggcaaca ttgtttataa 45240 ctccctaatt catggtttgt gcacctgtaa caaatgggag agggctgaag agttaattct 45300 tgaaatgttg gatcgaggca tctgtctgaa cactattttc tttaattcaa taattgacag 45360 tcattgcaaa gaagggaggg ttatagaatc tgaaaaactc tttgagctga tggtacgtat 45420 tggtgtgaag cccaatgtca ttacctacaa tactcttatc aatggatatt gcttggcagg 45480 taagatggat gaagcaatga agttactttc tggcatggtc tcagttgggt tgaaacctaa 45540 tactgttact tatagcactt tgattaatgg ctactgcaaa attagtagga tggaagacgc 45600 gttagttctt tttaaggaga tggagagcag tggtgttagt cctgatatta ttacgtataa 45660 cataaticig caaggiitat iicaaaccag aagaacigci gcigcaaaag aaciciaigi 45720 taggattacc gaaagtggaa cgcagattga acttagcaca tacaacataa tccttcatgg 45780 actitgcaaa aacaaacica cigaigaigc acticagaig titcagaacc taigiitgai 45840 ggattigaag citgaggcia ggactiicaa caitaigait gatgcatigc itaaagitgg 45900 cagaaatgat gaagccaagg attigitigi igciticicg ictaacggii tagigccgaa 45960 ttattggacg tacaggitga tggctgaaaa tattatagga caggggttgc tagaagaatt 46020 ggatcaactc tttctttcaa tggaggacaa tggctgtact gttgactctg gcatgctaaa 46080 tttcattgtt agggaactgt tgcagagagg tgagataacc agggctggca cttacctttc 46140 catgatigat gagaagcact tttccctcga agcatccact gcttccttgt ttatagatct 46200 tttgtctggg ggaaaatatc aagaatatta taggittctc cctgaaaaat acaagiccti 46260

tatagaatet itgagetget gaageatitt geagetiiga aatteigigt iggaatteit 46320 ticicciaca gicciatiag aggaggaic ticicigiai gigiaaatag cgaggiaigi 46380 atgccacctc tccgaattat ttttactgtg gttcctagac tgtaaacaag caattatgtt 46440 atgctgttga tgccagaaaa aacataaaag tttgtcgtta tctctactaa cggatcataa 46500 agggattigt gactggagit icaaacitaa igigiciagg cagtaatiit gacaitagat 46560 ccaaaacaat ttatagggtt tcattaaatt tcatctatgt gtactgttta ggtgttgaat 46620 agtitgacti gittittaac igaacaaaag ataigiciga agcitigiic iitaccaaai 46680 gcagtactga tcatcacaat atatttttta tggaacaaga ttggattgta tagaatggtt 46740 tctgatctga ttatcttatc tcaacgtatt attatgcaca tgtactaatc atgaaatatc 46800 tgatggaatg atgiticiat itaccigigi gaggcagcaa ggagigagai ggataacacc 46860 acatactccc tctgtcccag aatataagaa gttttagagt tggacacgat tattaagaaa 46920 gtaggtagaa gtgagtagtg gagggttgtg attgcatgag tagtggaggt aggtgggaaa 46980 agtgaatggt ggagggttgt gatiggttgg gaagagaatg tiggtagaga agtigttata 47040 ttttggggag tacattatta ttctagaaca atactgttgt gctcaagaag cgttccaaag 47100 atgiticaca accigigate gaigggitti gagettaate eigggacati cagiateaig 47160 atctgtctca ttcttaaaca tggaataaag gatgacagca tgatttcttt gtctctataa 47220 tettitgget acceaeagat aatagetgia aatetataet aettiaaaag gagtagiggt 47280 ggtggtgagt ggtgaatctg ccaccaccc accaccaact ctcaaaattc tgacatgtgg 47340 gateactgic aatecettet ceaagacatg tgggateact gteaateeet tetecaaace 47400 aattgtatga tagaacagtg gaaatcacgg acagaccatg gagctctcaa ccataatcat 47460 ccttgcgagt taataacaaa tggagcgtaa acttggcaag caaaaaactc aaattaattc 47520 taaaattaag cictaggatt caaaatagat ticcictcig catigigcig itaigatiti 47580 taatteegta acaaegeaaa tgeattitge tagtettata aagaagggtt aatgeaaata 47640 tictgatiaa aigatigiai ciaigaagii igaaigciag iggaagcicc iitgaccaig 47700 ttttgttgtg cgagcattta agagagtgaa gagaatgctt ctttggtgct gttctggtat 47760 ggaaggatcc acagataaaa ttcaggttct actgcttctc tgcttgtaat tttcatgaag 47820 ctgcagtgaa taccttgttg accacttgat ctgttgcttt gaaggagaat atagtagtgg 47880 ccaaggiigg igacggigai ggiggcaigi gaicccccag aicticagig acccagagag 47940 gaggggacgg cgcgtggtga gctacaaggc atactcagtg gagggcaaga tcaaggccic 48000

ccgtccgtag gggactccgc tgcatcaagg ccaactgctc cgaactgatc aatttctggt 48060 acggatcact tctcctttcc ttttttttt caccttaagc actctcttga ttcttcgctg 48120 ctacctccct taattictti caatatattg iggcactiga icatggcgga gacccacctt 48180 ccagtgtgaa tggattttgt caaagaacta aatttattcc attagcttat tttccgatta 48240 catggaagac attetttet ggaataaata cagaactaaa teetgtttee tgaataaaag 48300 ttgttagtgt gtggcatggt gcatttccgc gcttctaaat tttataaaac ctgttcattc 48360 aatttgaacc tgcatccaat ccaataittt aggtgcagac aggtgcttgc ggtcaggtta 48420 aagaagtigg caaaaaigci icigaagaaa ggitaatigi igiticaici caggaggtaa 48480 tatgcagatg attattccaa ttggcattgc cttgccattt ttatcacgag tctttacaat 48540 tttatatcct cctacatatt ctttccagat tccagatgat ccagtgtctc caacaattga 48600 ggcgcttatt tigctccata gtaaagtaag tacacttgct gagaaccacc agttgacaac 48660 acggcttgtt gtaccatcaa acaaagttgg ttgtattctt ggggaaggtg gaaaggtaat 48720 tactgaaatg agaagacgga ctggggctga aatccgagtc tactcaaaag cagataaacc 48780 taagtacctg tettttgatg aggagettgt geaggtaatt tatttggeea tacctacace 48840 agagatccat atattacttt tataactgca gtttttactt gttaacattt cattgtgctt 48900 ttacatitgt tccaagcttt caggttgctg ggcttccagc tattgaaaga ggagccctga 48960 cagagattgc ttcgaggctt tgaactagga cactcagaga tggaagttct tccaataatc 49020 cgacacciti igccccigii gaiggiccic cigiigatai ciigcciaac aaggaatica 49080 tgctatatgg acgatctgct aatagtcccc catatggagg gcctgctaat gatccaccat 49140 atggaagacc tgccattgat ccaccatatg gaagaccaat atccacaata tggaagacct 49200 gccaatgatc caccatatag aagacctgtc aatgatacat catattgagg gttgaacaat 49260 gatgggcctc gtgatcaggc ccggtcctga ggggggtcga atggggcgat cgctccgggc 49320 cccccgattc ccagggcccc cacctatctg tgcaacgagt agtagcgatc ttccagcgcg 49380 caacgigagg cgatgitici ccgigatitc gccggccigc aactgcgaga tcgcgagtat 49440 aacgatcagc cgatcgatct catctgccga ctgccatgct gatgccacac gcaagcgcag 49500 catatcagcc ttatcttggt tgatcggcat gctggacgag cacatctgtt gtcgcatcaa 49560 ctgctgactg ctatatatgt gctggtgctg aatcgatcga ttgtcgtcac ggaagtgaag 49620 aacaaccacg gcactgctgc ctgctgggct ctagccgcca tcagtaagta cgctatactg 49680 cctatctaga tctagatcga gattacatag tggaattatc tgtttataac aaaattacaa 49740

ggtaicaati gataatitaa ggttataacc gtacaaacti cagtgattig ciggiticac 49800 attggttaga titgtticaa ctaattiggt acticigtag ccitgtaatt tacgaatcia 49860 gtattaatat tticttaagt attagccigt tccttgatat tatgctgttg agaaagtatg 49920 caatagataa caaaaacaag taggtgttt gaggatgctc aagagtaata caggcacttc 49980 aataattctg atattatcag gacatcatca ataattctgc gcctacaaat cttcaaagaa 50040 aattttaata taaigegtat gattitttaa ataegaatat igatigetai itaaagatat 50100 ttatattata tggtaattat tatttgaagg tttataataa aggcctccgt ttttagtttc 50160 acgetgggee ticagaatet caggacegge cetgeteatg atcettacae egigtateet 50220 gtagagtact tctctaaaag agagtaccct agtggaagta gcaaagttgc accatctgct 50280 tcatacgaaa gatatgcagc aactactcgc ttgcctaata gagaactgcc ctcatctatt 50340 agtectggtg cegattatat gteetgeegt tettatettg accaagtace tactgatagg 50400 tactctaata gggttacact acaattaggc ctcttgagag ccgggaatag taatgtgcaa 50460 caattaggaa tcaccagagc tggaaattcc aatgcttatg attatactga ggtacatttc 50520 caatgcgtta gcttgcctct tctttgcaaa tggccctcgc ctgatatgtt tccattagaa 50580 acatgaaacc atatatttga ctgttgcatt atgtctattt tcttccatga tggttcagac 50640 gtcigaaaaa aggacaaaaa tattctagaa tatgtcatgg tgatccaaat atatccttct 50700 gtcitgtgcc cactctaata tctatcgttg gtaacactat tcaattgtta ccatgttgtt 50760 gcaaacccta gattcagtta ttcagctgtt ctctgctgct gttgcttacc agttttctta 50820 gtigggtgtt gatctitict cattititat ticcligitt cctggticac cigcigccic 50880 tctgatgcat ctgaatgtat attititgitc tcttcagtgc ttaatagatt taaatticat 50940 tcttttcagg ctgcggagct gatccatgga cgtgaggatt accgaagact gtcaggtctc 51000 actgggtatg gcttacgcag actgaatttt tacaggacac aaacatgaat tttgtcctca 51060 taatcattga gtgatgatct ctttgcaggt atccaggtgg ctctgtcgaa ttgtggattc 51120 caaatagtta actggagtct gtcattggtg ttggtggtgt caatctagct gagatccgtc 51180 tggtatagcg taagagaaac atcatgcact atccccagtc ataaccatgc cccaatggcc 51240 accaatagtt ticcicgiga aaatcicccc tigatcccag atciciggig cgagagigaa 51300 gttgcacgaa gcccatcctg gttcttccga gtccattgtg gagatccagg gcattccgga 51360 tcaagtgaaa gccgcacaga gccttctgca aggcttcatc ggcgcaagca gcaacagcag 51420 gcaggcgccc cagtcctctc gcatggccca tiattitiag taagctggag gacaticgca 51480

acaggggggt cagtggtcac tgcaaagctg agtitgtict tcagitcaac tgcagaaaat 51540 tgcagatcgg ttgccgtagt tgctagaacg gtacatagtt gccacctaac tgtagcgagt 51600 ggcataacti attgtgtgtt actgcccaat gttgtctctc cttgtgttca tggattcaga 51660 ctigigatig tagiatitci ggatcagaci ggagtaaaag aaaaaaaaa aggaagacat 51720 gggtttaaca gtaagctcaa aacgttgaca gtagtaaaat aaaaggggtt tgttcacttt 51780 atticcaata icaaccitac caacatiigg cgiigaatca titalaccac aicgciigig 51840 cagctgaatt tggggctgtt taaaagatgg tctcttggat tgctaattgc ctcgcggcaa 51900 gcgtggtacc ttgtacaata taaatataat tataactatt taatttcata attaaacatg 51960 ttgttacaaa tctctactat tataaaaatt gaagatgttt tttgccggta ttttggtacg 52020 tcatcigigi atgaatccgi tittaagtic gittgctttt ggaaatacat atcigiatti 52080 gattcagttt ataagatcgt tcacttttgg taatacagaa ggaatcatat aagaattctg 52140 tttaaaaaaca ctcgtatagt aacttgagac gatcagacgc ctaactacag ctcatgattt 52200 tetaaatata tatatata tatatata taetagaaaa aatatatgig tgitaaaage 52260 tatcttaatc ttattattgt tatatatttt agttaacaag aaatctattg tgggaacttg 52320 ttiggatata tattititta aaaaaaatca igagcigcaa tiaggaatcc aaicgicica 52380 agttagcagg agggcgagtt titttaaaga gatticttat acgatticit ciatattict 52440 aaaagcaaac gaacttaaaa accgactcaa acatggatct gtatttccaa aaacgaataa 52500 acttaaaaac cgactcatgc acagatgatt aatttttata atagtagaga taaacgaact 52560 cccacagtga attitatttt aactgaacca tataacaata ataagattaa aatagacttc 52620 accegitgea atgeaegge attititeta gitaaagaag aaataaaaaa acacaaaaat 52680 ttataaaatg taaaaaagaa aaatattata attitgttag aattattatt ataatataga 52740 aaaatagtig ccaaaattic tcaacgaatg tcgaataaac tcagcaatgi catatattia 52800 aatatgatgg taatatttgt tegeaaaact ttaatettea ateetteaac aacatagata 52860 tacaacgtcg taatcgccaa caagcccgag tgaccataca ggatagccga gcggtggatc 52920 ttataaaaat tgaagatatt tetteaaaga ttteeataeg ttetetaete egitaeaata 53040 teggitetae teegitacaa taleggitti giacaeeeeg egeaegegii gigigitete 53100 ccgttccaat acatgaagct agagtcttgc ttctccctgg tctggcaggc cctttttcca 53160 ccatccccac cagggccagc gggttacatt gaccgatcac ggcccacatt agtggatgca 53220

gccagccacg ctcttcacaa atcatgtgat gaacattagc tgagttaaaa tttatccttt 53280 gatgattgtt agaaatgttt ttttctccac atcttctctt tcaattttgg aaaaatagat 53340 tictigatit tigigcicgi acatcactaa taaatcagii gitaccciic cacacatigi 53400 caatttacca tgtctattic agctcttacc ttgtatagtc ttgactcttg agtcctcgct 53460 attgactaag ttgctacatg cctcctacaa atcaatagac tgccataaca atattttcta 53520 cgacatgatc catattagtc catgcaatgc aagtacacac acactactgc acgaaaaaac 53580 tatgcaccat aacttcaaaa ctaacatgtt agaatgacgt taatttttca ttacaattat 53640 attcatcgac cgttaattta ctaggcatcc tgtttaaaaa aaatattcac cgaccatacc 53700 cacatgitico giagiticati aggigatgga toggiagita cagcagoigg attitiatat 53760 tttggtcatt ttgaaaaatt tatttcgcaa atagactcct gaaaaaactt atcccagaaa 53820 tagtcccttt tggagcgtca gagtggctgg cgccgtggtc caacgggaca gcgccaacct 53880 ctctggcgcc gcccccgcc tctattcttg tttctctata tagagttgca aactttttat 53940 ttttgtttta ttttttgga tgtttttca ctcttagaat cacgatacaa ccaactacaa 54000 aaaaaattaa actcgaacgg aatatatcac ttagctagaa gtctgaaaat atagcatacc 54060 acttatctac tttgcacctt caccaaaatt agaccataac ttctttagta aaatcctttg 54120 atcagcatat taaacataat gcactctatc actaggtgaa attacttaat ctaattcaaa 54180 atataactac atgtagcctt gaaaaattct acatgccaca tatttcgtcc gtttgagttt 54240 attattttta tggttcgttc atgtgagttc ccaagtgtga aaaaaaaata aaataaaaat 54300 aaaaaagttg cacatcctct cctctgcatt agagaggaga ggagaggaaa aattctacag 54360 gtcacatatt tcgtccattt gagttcattt tttctatggt tggttcttgt gtgttcctaa 54420 gcgtgaaaaa aatatcaaaa aaataataat aaataaaaaa attcgggggg ggggggcgcc 54480 agccactctt aggggtgaaa acgatcggat aatatccgat ccaatctgct ccgaatccat 54540 ccgaaataag gatatggtat gggtttttag aaatctggcg gatatggatg cggatgagga 54600 tatggtatct ccgaaatacg acggattatc cgacattttt gtcggattat ccgataggcc 54660 ctttaccgga taatccgaaa ttatgaacac atgtaaccac ictatctatt gcatataaca 54720 taagttggtc catccaatga cctaattcat caattaccct agatttctta ctatgtggtt 54780 ttcaccattt catgtcacac ttgcgtagct gtatttttat aaaatggaca tcatgtattt 54840 atgitgitta gcactiaagc acataattat tacaatgggi cgittatiga catigigita 54900 tttttacttg cattgctaac tcaatgttgt attgattgca tacacacgta acatctgata 54960

aaatttaatc cgtttctgaa ccgattccgc accatttccg acatctgcat ccgtacacta 55020 tccacaccca ctccgaatcc gcttaaaaat atggtttagg atatggtatg accactatcc 55080 gtccgaatcc gctttatttt cacccctagc cactctggcg cgcttcccct gccacctcag 55140 catcgtccca ccacgtcggc agaaggacgg cggctccagc cactctggcg ccacaaaaaa 55200 ggaccatttc tagcataagt ttitttaggg gtctatttac gaaataagtt tttaaaagga 55260 ccaaaatgtg aaaaatccag gttacagcag actgtgataa gcaatagcta tattgcctat 55320 atatacacgt atatgcattg ctaatccttc aattttgtcc aattctttta aattgtcttc 55380 accigitgca acgcaigait tititiciag icitaaccii aactaaicii aataactaac 55440 taaaagattc gtatctttcc gatcgtcacc ttgtccatac gctaattttt cgtccgtccc 55500 ccctcccct caaaaaaaaa gggaaaaatc cattttacac cctcgaactc ttatgcttgt 55560 ctaaaataca ccccgaact ataaaaccgg gtataataca ccctcgagct atcaataccg 55620 gacagticaa gggtgtatta tacciggtit tgtagtiigg gggtgtatti tagataagca 55680 taagagtica agggcgtaaa tggactitic cccaaaaaaa atcccagtcg ttactticca 55740 tcctgagaat cggagacagg gaaaactgaa gcatacacgc aaatagaatc aaagataggg 55800 aaaactaagc atatacacac aaatatatcc aaaaattccc atgcagctag atcgggtgcc 55860 accettette ccaaaccacc acattecaat etaaatctaa eactaaaecc taaatcctat 55920 gctaagtcat caaattagac tcggttctac caatttggta atatatcaaa ttagacttga 55980 tttttactga tttgaggttc tcgaggtgtc acactatgaa acggaagttt ttcccgttgc 56040 aacgcacggg cactatgcaa tatcttaact aattaaaaga ttcatatttt tcctttcgtc 56100 acaccgatct ttcgtccgtc tgtaacatca cgtgcacctc ctctccaaat cccacatcat 56160 cataatccga cccaaaaaca aaatctcaat ctcaatccaa tcagaatcat cacaaaatca 56220 tccaaaatat caagagatga ttataggaga tggaggggtg agcaggagca acatcatcat 56280 cgcataaaaa ccccaaaatc aatcacaaca acgacatcat tatcacataa gaaaaacaat 56340 acaaacaaca tacacaatca acaacactgg cggatccagc cgaggggaca acggcgtggc 56400 agcgggcaga tcctctcggt cagatccgcc cacgggtgcc actgacgtcg ccgccgccac 56460 cggatccaag ggagaagcit cggacagagg gagagggggg tagaggaccg ctaaatccgc 56520 ccaccggaaa tgccgccgcc accacctccg tcggatttgc ccgagggagc gccgatgccg 56580 ccaccgccat cgcgggagaa gcttgggcac ggagggtgag gaggaggggg ggtagagaat 56640 cgccggatcc atccgctgga aaagcctccg ccggatccgc ctgccggaaa caccggtgtc 56700

gccgcctccg ccggattcgg tagcgggagc cgccgatgcc accaccgccg ccggatccgg 56760 teggtgggag ceaetgaeae categeegee geeteetetg etaeegaeaa gggagagaeg 56820 agaggggcgg gggcgagggc gggggacgag agggttagag ggagggaccg agtgggagag 56880 agagggacga gtgagaggag ggggacgagt gaataaggat gcgtgacctt atccactcgc 56940 gcggtcgcac cccggctctt tctctcgctc agctgttgcg cttgtggaga ggatgcgaga 57000 ttttttttg agtaaaatgc acgggcggtc cttaaacttg tagcggtctg tcatctaggt 57060 tcccaaactc tcaaaatgca tatccaggtc ctagaatttg tcaaagtgta tcatctagat 57120 cccaaaccga cacatcctct cttggatcct acatggcgct aatgtgactt gtcacatgga 57180 ttttttccat cttctgctcg ggtcacatag aaaggaaaag aaaggaaaat acaagagaag 57300 aaaaaaagaa aaaagaaaat ttitaaatgg gtctcattcg tcagtcaaaa ttatgccaca 57360 tcatgtccct gcgacatgcc acatcagcac cacgtagcat cctgaagggg ttgtggcgat 57420 ttgggaccta aatgacacac tatgacaagt tctaggactt ggatatgtat titgagagtt 57480 taaggatita tatgacacac tactataagt ttaaggaccg cccatgccct ttacttttt 57540 tttttacacg gagagaatge gaatttgttg gttagttgeg getgagggtt tetegeaegg 57600 agaaatttgc ggtgggagaa ttttttttcg aggttctttc tattgggaga agacgggatt 57660 atagggatta ttactggtgt ggtggccct gttttctttc tttttcgagc ttctttccgt 57720 taaattcact ttictctctt caaggagcgt aggacatgac tgaatgcagc tgctgtaaat 57780 tagaaataaa aaagaaacat attctgtttt tcattttttt caataggtaa atataaagat 57840 ttttaagtaa tatttaaaaa tatatagtgc tgatcaacga cattgttaag tgagattttg 57900 ctgttactat cactttittt tccattgggc tcacgtacgg cattaaaagt titagttitg 57960 gtictctcct titigagitig ggcatatacc aatattgaga taggtatact aaagttcatt 58020 tggattttat tcgattcaac ttttttgggt tttgttcagt tcttttttac atgtttctca 58080 totgaaatta ggaaattagg titggiaaag totigaatag ataacgoigi igacgiitga 58140 acatatatti atciaittai tiatilaaaa atatatgaat aattittait tigitaigac 58200 ttttgtcggt gacatgggac cgggagtatc atgactagag gcttgggcag gagcgatcac 58260 ccacgtggcc tgatgtaaca tcctgaaaat tcccaacaat aaaaatcact aaaattttga 58320 actititaaa actitigcat catgotggti gitatgatig ciatigciig ccaaaccgta 58380 aatgatcaca aagaaagtaa agtaaggatc taaaatttaa gtaatagata aatttacgag 58440

aatataatat ttaattgcta accctacaaa taattacgca caagaaaaca aagccagaca 58500 aacggaaggt taattactaa tttaaattat ggattaatta ttaaatactt gaaccatgtg 58560 tigcgigcca iggcaictaa atacacaiga aataaiggic atalaattaa attaagctii 58620 ataaaattat gigaggitti aattaagcaa tiagcitaat giigiaccga gicttaatat 58680 actatttata gaataaataa attcaaccta teegtgtaaa atatattget ataagtteat 58740 tcaatgtact attgtaataa taatggccac attaggatat titaattaat titggaaccc 58800 tcaaagcctc caaaattatc taggttaatt ttgaaattat acctcattta agtaatgcaa 58860 tagaaaaata tacataaaaa taaaatatgg gtaatattag aaattgagta aattticatc 58920 taaattaaaa catatatigg giaaaccicc tilaigiaaa aattaagatt tatagaatga 58980 aatttgtaca agggataaac taaaatcggg ttaaatagaa aatggcactg ttcattgcac 59040 totaggtgct cgacgtggtc cctggcccta ttttccccct cagccgcgcg cgcctggctg 59100 cctcgcgccc cgcgccacgc cacccgcgtc gcgtcgccgc tgccgcgccg tcgccgtcgg 59160 ccgttccgcg ccgctcgtcc gtcgctccgc cgcctcgcgc cccgcgccgc gtcgtcatcg 59220 cgtccgccgc gcatagcccc gcgccgccgc gccatcgtgt cgccgcccg tcgcgtcgct 59400 ctcgagcccc gcatccctct cgagccccgc acgtcgcgtc ttgtcgccgt tgctgccgcg 59460 tegtegtege egatgetgte gegtegeege tgeegeegt egegtegeet tgegeeegt 59520 gccgccgctg ccgcgttgtc gctgtcacct tcgcgtcccg cctcgtgccg cgcgccaccg 59580 ctgccgccc gtcatcgccc gctcgtcgcg cgcgccgccg ccgctgccgc gccgtcaccg 59640 tegtgtegee gteggeeteg egeettgage egeegege eegteeeete gegeetgege 59700 cccgccgcac ggccgtcccc tcgccgtcgc cctgcgccac tgccgcgccg cccgtcccat 59760 cgcgccgagc cccgtgccgc cgcgcgcgtc gcgtcgcccc gcctgtcacg ccgctcgccg 59820 cctcgagcca cacgcgtcgc gccgtcgcgt cgccattagg gccggccacc cctttccccg 59880 cgccctataa aaccccccgg ccacccccct ttcaccccac accatcccca cccattcccc 59940 tcttcctctc ctccttcccc tcttcgtccc ctccaccgcg ccgcgccgcc gccttcgtgc 60000 cgccgcgccg tgcgccgtcg tcgcgccgcc ctcgcgccgc cgcaccgccg ccttcgtgcc 60060 gccgcgccgt gcgccgacgt cgtgccgccg tcgccgtcgc cgtcgtcgtg ccgccgtcgc 60120 cgtcgccgtc gtcggtaagc cgccgtccct tccctcgttc cgacgccgtc gccgcccggg 60180

agagagaga agaaaagaaa agagaagaaa agagaaaaaga gagaaaagaa aagaaaagag 60300 attagagaag ggagggaaga gtgggcccca cctgtcatta gccccatcca attcccctta 60360 gaaaaataat tetgiagaaa agaaaateaa gatettgaee eeacetgtea gteactatag 60420 cgtgtggata aggttgtatt aaaaataaat gaattaggaa cagtactatt tcgcaactat 60480 tagaattaat tcaaatttga atctttacac tagcataact aattcatttt agctccgatt 60540. tgagtggaac ttgaacctaa attcatctaa attcataagc tttccaatgg tatataattt 60600 actattaaat aaaatatatt tataattatt aagtaattaa tatcatatga ttaggttatg 60660 gtcaacttaa aaatatgcta ataaataaaa ttagtattgt ggatgtaata atatttgtct 60720 ctaacatgtc ttgccactgt aacaaccaca caaactaata ttaagtgatg tctgaaatga 60780 atgaatgaat aggaaaatac tagtacttgt ttaatattcg atagccatat aattaaaccc 60840 atggcttata ggttatttaa atcaaatgta gccttgtgat tatgcaacta aaatataaac 60900 acatatagat gaatcittag citgattagg aggaataata acagagciag igigaciagi 60960 tatgatatag cttgttgtcg gttgcctata tttagtaaat ggttcaatgt taatacactg 61020 atgcacacac ataccettti tgataaceta etagitgeat atattaaaet iggtaataaa 61080 tgaagaacca atatattagc taaatactgg tgctagttat aaatcttgac cacacataat 61140 tttagttcaa accacactg aggattgttc gttataaagt tataaagtta taaagttata 61200 caaaagataa tatgtaacta taatagtatt aaaccacaaa tctaaaatac agggcgcata 61260 attgtcaacc ttttatgcaa acggataata tccatatata tacatcatgt ggataattcg 61320 aataataget eeattggtaa aataataatg taggegaate atggtgatga gatggtttat 61380 cctaaacctc cccatcgaca tagccatgct atagggacct gaccatttta ccttcataac 61440 agatetette cataageeaa tagetagaet aaaceacaga ttageaaatg tgtacateat 61500 atattgtgct agitagtacc aatagaacca tcaggacaat ataaatacta aggaatctta 61560 gctcttagct tgattagaat ccaatagcaa acacgagtag tatgagcagc cttaggttcg 61620 acctcaataa ttatattttg cttgtgcata attgcttctt gttgaatatt ggtttttctc 61680 gcatattata gaaattgtat atcggttagt cgtgaggcaa cgtatgcagc tttcaggagg 61740 tgaaggitga tcaagatigt atcaagaata atgactatic taagcaggca agicatcact 61800 attectigaa caigitgate etaatigega aattatitig titacaaata aaatigeatg 61860 caatgatgaa catcctactt gtgattatgc catgccttga ttattgttta cccttaaaat 61920

cctigiaacc atgattacgt atgagiccct agicaattat gacaattgct tagagatgct 61980 attctagaat catgcatact catatttatc aaatgctata tgcttgggca attacctttg 62040 ggaaggtaat tgagatgcgg catgtggaga catgaacgcc acattgccat gatattaatg 62100 acatgattig igaaaggaga aataaaatta aacaacigit ticgaciggg gcggacggag 62160 gattigggig gtaiciggaa aaggciagia ccgicccgg icaattaagg accgagccat 62220 gaagttaagc atgaaacgac ccccgtacaa ccgcacttct cgtatgggta tagacctagc 62280 ggagtagata gctgagcgga ggcagtatcc atgcatagtg gtttcttgat gtgtgaggca 62340 ggggctctac ggtggggcag ccattggtag gaccgcaagg cgggtatcta cagtggtgtc 62400 gccatcggta ggactgccat gtgagaatct aaaacataat tataacttaa tgcatgtgtg 62460 agtcttccct tcccgggtgc gccagaactc ctctcactgc tagaaaccgt gtacgcctag 62520 agtgcatgag gatgaaaagt tcatggagcg ggtactgcca atgcgaggtt atcgaaaagc 62580 tctgccgtga cgcatctcat gtgttgggac gaggctcatg tgttgggcag tcgcggagtg 62640 cgggtaaagt gtacatccac tgcagtgtga gtaaaccaaa tctattcgaa tagccgtgct 62700 cgcggttatt gagcaccggg acatgtatta cacttggcta gactctaaat tcttaacttg 62760 tggggaatgg gatattgcat gatgaatttt atgctgatgg agccacatcc cgagaggagg 62820 gaaggtggac atcctcagaa aaccatgacg attcaatggc gggaagctat ccttgggatc 62880 acaatggatg gtggacagaa ccgtcgttgt ttaaagtgaa cactggtact aaaatttgat 62940 cgatctatgc taggttttag gcttgtgaaa agaattgtaa aattagcttt atgcaaaagg 63000 accigaagee attectigaa ataeeeteta teataigeat igitaitaig giggetigei 63060 gagtacggtt ggtactcacc cttgctattt atatatcttt taggagagtg ttgaagagaa 63120 gcccttgtcg gtacgcttgc gtatcccaca agatgatcgg agtgcggtct tgttctaggt 63180 ctcgtttccc cagicgactg cctgtggcat gttaaccggg cccttatatt attttgtctt 63240 tcgctgttgt tctctgatag ttgttggcct acctggccct aatgtaagta tttaactctt 63300 ttagcctaaa ttcattcgtg atatgttgtg atccaactat gtatgtgtgt accaactact 63360 gatccaggga tiggtacgga taaacacaga agatticcga titccaaaat cgggggtcta 63420 cacctgaccc cctcaggggg ggggggtcgg gcccgagggt gatgtggccg ccccctctt 63480 tgtctccccg aggggtcgga ccgctcccgt ttctgccccg agggctgagg cgccccgacc 63540 cctigtgggt titgcgccgc gtgtatgggt taggtgagca caacggggct cacctaaccg 63600 tatttatigt ggttiggacg agcgcgicac gccgcatgta gcgcagtgca gcgcgctcgt 63660

ttatccggic igigaccagi cacagaccgg icagaicgig ggiiaggigg caacaggcgg 63720 tctgacacac gcctcgcccc atcccgtcag gataagagcc tccaggcact tgtccctagc 63780 ccggagccag catgctaact cctggagatg acacgttggt cccggtcaga tatatgccag 63840 gcttcatccc aaccattaca agcaagatat tgtatgaaga agggcgaaca tgcagattgc 63900 tggacigaca cgtggtggac aagaatgacc gatttgtgac cggtctgaca ctggtcatgt 63960 cgtcggcaga caaccatgtt cccacgttgc acctgctttc ggcggagtgg aggtaggtat 64020 gggccatccc atcagaaggt cgttcggaca gcagccattg caagtctccg cccatttatg 64080 aagagatgac agggtgatcc cctggagaga aaaaaaggag gaccttgccc acttaggagg 64140 tgaggacgac tggaagggga gaggatctgg agagtagatc ccacgagagg aaaaaaggga 64200 gaagagggtt tctagagtaa gagctctctg actctccagc tctttgtagc ttcttcgtac 64260 acagatccac cagaaaatag gagtagggta ttacgcttct cagcggcccg aacctgtata 64320 categoegt gictigiget titticatic tegegaacti tecacagact aggagetiag 64380 aatctcgccc agggcccccg gccgaaccgg caaagggggg cctgcgcggt ctcccggtga 64440 ggagccccac gctccgtcaa ctttggctta taattaaaaa tactctaagg atatttttt 64500 atattttatt ticttaigic talaigaaat tilaaalaag alagalggit aaacalalat 64560 tggaaaaaca tatatccaaa agtccactat cacaagcgta gcatagatac gattacaata 64620 cgiticcgcg aagacigiti aiacciacic taticccigi icciigigcg giigigccai 64680 ttggggctgt tttttcatct cggattaact cgcgtggaaa ccgcgagacg aatgttttga 64740 gcctaattaa tccgtcatta gcatatatgg gttattatag cacttatggc taatcatggc 64800 ctaattagac ttaaaagatt cgtctcatga tttacatgca aactatgcaa ttagttttc 64860 tttttatcta tatttaatgc ticatatatg tgtccaaaga titgatgcga tgttctggga 64920 aaatcttttt ttaactaaac atgcccaagg tgtttctcca attaagttga cccaaaatca 64980 ttcggcgtca cctttgtctt tcactttcct tccactacaa ggtgatgaca ctgacaaaag 65040 gtccaaaagc tacaggatct gattttigtt catccatcig igaigtgicg gcaagccatc 65100 catggagttc atccactcaa ctcctctct tcagagagag agagagagag agagacagac 65160 agacacatgo atgatagatt gigotagiao ggiagiaaca tittatigoo tootittota 65220 aaattctagg ttgtttggaa aacaaaaatt ctagattgtt caataaatta ataatattag 65280 gtatttatti taagicacti taggigitaa tiitigaatt tiaaactgci taaacicici 65340 ticgacgcai cigagagcag giacaaiagc agaciaiaag ccagciaiaa aiaiaiitta 65400

agtagataaa agaggaaaaa taagagtagc gggctataga titgtagaca gctgcagcgc 65460 gagciccaag atacataigi giaigacaig igagaccaaa cattaaitai giagiataig 65520 tttatatgta tctattgtat gaattggcta ttaaattgac tatgggtgtg ttcggaggtg 65580 ggtgttggga accatctccc aagcacggaa aacggagcgg tccattatgg cgtgattaat 65640 taagtattag ctattittia aaaaaataaa tcaatatgat tiittiaaac aaciittigia 65700 tagaaacttt tigcaaaaac icaccgiita giagiitgaa aagcgigcgc gcggaataig 65760 agggagaggg gttgggaacc tcctcatccg aacgcagcct atacatgatt tggagccaat 65820 agtiggctat aatattaaac tigcicigag iggcicitga aicaicgaag igatagaaat 65880 cataigcaga aaigittata itigigaigi aaaattigaa ictaaaatta ittataiitt 65940 gaaatggagg aagtactacc taaaacaagt atgagaaaga gacatgaaaa acacaaaatc 66000 tagacttaaa aataattgga attactagca ggaggtcgaa gtcaatcaag acggcgaaga 66060 aaagcacagg ggacagcaga cacgttaaca cgtaagtaaa caaacaagtg gttaattaat 66120 tagggggccc tcaagtctcc cctaaagcca ctaaacatga caggtttgtg taccatggaa 66180 aaaagggtga agcaaaactt tattctctct ctcattagat taccagttgg aaagcaatcc 66240 tgggaccici agctaatcic attattgtag aacaacgitt icitagagag agagagag 66300 agaaataagt caataaaaat tactactaat ccacttgaac cagttctgtc ggtgtcggat 66360 gatttaccac attigacgaa acggactatt tattcgacgt ttcgaaaaac acacttittt 66420 agaaaaaaaa aactttcctc tattagccac tcgttttagt tatataccta tccgagtatc 66480 tgitaagiti attiaicaaa atattiaatt taicictata attaaatata caatccgiaa 66540 aaacaatcac gcagtaattc gtttcaaact gagcctcagc tagaaaatca aaatggaaat 66600 gaataacaat agcaacagta gagttagttt ttcggcttat catccgcaac ccaaatgcga 66660 attitaaact tagccitaga gitaatitti aaggcitgii taccatacti cattiteeca 66720 gcattagiti cititgicac taaaaatigi tilittaagi igiticgitc aitticicac 66780 ggtttatcag cagtagagcg aagccattct tggagcctgt ttggcacagc tctagctcca 66840 gctctagctc cactctttct ggagctggag ctcagcccaa cagttttagg tgcaccaaaa 66900 ttaggagtgt agitgggtgg aactcictca caaaaaattg iggagcigga titagacagc 66960 tccacaacti cactccaaac ccaaciccig aagitaaati gataagitga agcictaici 67020 atcaagccct ttttcttgat catgcttcta cctactccat ttttgtttct tggccctcac 67080 aggaattgga aaggaaaggc gtatatgcat caatgcatgc atgcgcacat caacctcgtc 67140

catcaaccat cataatcatc atcatctcgc cagctgacga aaatgacctg catccatcca 67200 tcacggacaa tccaagcgaa caccgctacc aacatcacag ccaacctgtt tatcactagc 67260 tcttgatacc actcctacat aaacactacg cgcaggttaa ttaattaagc gtgattactg 67320 aagtaacatc taatcacgtc ctggttagcc tttaataaga caacagttag agcaggtaca 67380 atagcagcag gatataagcc agctataaaa aaagagagaa aagagcaacg ggctacagat 67440 ctatagccag cigiagcaig gacticaaga cacaacgigi giataacagg igggaccaga 67500 taataatagt giagtatagt aagtaactat tatatatatt gactatagat gattiggagc 67560 tattagtgtg ctatagtatt aaacttgctc atagagcagg tacaatagta ggatattagc 67620 cagctataaa catattataa tgagataaac attgatagag aagagcagcg ggctacagat 67680 ctgtagccag ctacaacacg gactccaaga cacaacgagt gtatgacaga tgggaccaga 67740 tattagtagt atagtaagca actattatat aaattaacta ttacattggc tatagatgat 67800 tiggagitag tagigggeta tactattaaa ettittetet tageaaaaat caagegeeta 67860 atcacattag aggagtagct tigagacaaa ccaattagcg gcgaatcaag cgatctgcgt 67920 ggtcgtacag tgatgggccg ggccgggccc acagcccgac agtgacaggg ggcctgacgc 67980 atgicagect cagecetgga egggagetag eegitgigie eeegggggag gggaggggg 68040 cattcccatc atttcgcccc tcctccgggc ccacatctca gtgggggtaa aggtgtaaat 68100 tactgcgacc gcgagtccag cgagcctaga tttggacctt gtgtccgttt gactgaaccg 68160 gagetactee ceaataeggg gggattgegt tgtgtgeatg ceatgtggge eegagegee 68220 ttigitcgtg gcttigggti ggaaaggiga ccgigtgagc igigcggigi tgiaciacgi 68280 attagtataa atcattttig ggtactacic cciccgicca aagcitatti ataattigit 68340 gtactccaac cgtccgtctt atttaaaaaa aatataaaaa aaattaaaaa aataagtcac 68400 acataaaata ttaatcatgt tttatcatct aacaataaaa aatactaatt ataaaaaaat 68460 ttcatataaa acggacagtc aaacattgtc acgaaaatct aatgtttgcc tittttttta 68520 agaccaaggg agtatctacg aacaaagata atacatgtta taatcatgaa gcccatgatg 68580 tgattagccc ggccgtttga ctaacctcac gagctacgtg gctgacaagt ttaacttgtt 68640 aactccatca titcggatac tiagagcaig tacaatagca gactaitagc cagctataaa 68700 catattttaa tgggataaaa gatgagagag aagagcagcg ggctacagat ttatagccag 68760 ctgcagcacg gactccaaga cgcaatatgt gtatgacagg taagaccata tgttaatagt 68820 atagtaagca actatittat aaactggcia ttagatcggc talagataaa tiggagciag 68880

tagtggacta tactattcaa cttgctctta tatgatataa atattgatat aactatatga 68940 tttigttaat gacatgtitg tttatggatg gactatgtgg ggtcggtcgc ctccgtagct 69000 gaccaaaata caaacttaaa acccctatct ataaaaatct aacttttgtt tataaatata 69060 gatataaaag ttcataatta gagcctcatc ttttaaacga aaagagtact atgaaaacaa 69120 ctcgtaatac aaagactaat tacgacgaaa agaaaatagt actgacaaga ggaaagcagt 69180 gaactigcat actocolog taaaaaaaac caacciagac acggatataa cactatatat 69240 ctagaticgi icgitgiaat gaagigicac ciccgiaici aggitggiii tiicgiacga 69300 aagaagtatg agtaaatcta aagctatgta tacccttcgt caaaaaaaaa aagtaaacct 69360 tgtactggtg cgtgtcacat cctaatataa tattgtttt tatggagggt gtacagttga 69420 aaaaaattga tgtgttttaa ggatgaaaaa tattggtaat gttggctatg taactctaga 69480 aaaaaaaatg cagtaataat aaaatgctaa tttgctggag tactagatta tagacaatcc 69540 agtccaggac acgacaccct ccctactctc tccacttcca ctctcaccgg ccaccgcgcg 69600 ctctctctct ctctcccc cttctcccgc aagattcttc ccccaaatcc cacccgatcc 69660 acceccecce cocecteece geagteceat egetecace geogeogeag egegeece 69720 acgcccgccg ggcctgcttg ctgtgtgtgt gaggaggtgg agttgctcgc gctcgttccc 69780 gcggccacct ccgcctgctg ctgcttctgc ttccgctggc attgcgggga ggtcgtgtgc 69840 cgggggacgt gggggctcgt gttggagcgc ggctgccggt gaggtggggg gtgcggcgc 69900 gcgcggctcg cgctcgtgcg ccggtggcgc gggcgcgggg ggaagcgtac gggggagggg 69960 gagtgtggcg gcggcggcgc gcggggtagg gacgggcgcc gccaccacca ccggctcgtt 70020 cgctggcagg cgctacgcgt ccagatccgt acgccggtat gcttcgtctc gccgcaactc 70080 tctccatttg attagtatcc cctcgccgaa acgaggcctg tgaggcgccc gctttctggc 70140 tggcttccct gtactcgctg cttgctcctg cctgttgggt taacccgttt ccatcgaatt 70200 tgggtaagcg aaacatcgcc tcatatgggc atttggggtt ctggcagcct taggctcgcc 70260 atccgtcgcc gagcttccaa gtgaccggcg cttgttggta tatttgcttg cttgttcctg 70320 tttggtggct gcgctaaatc ttttgtgctg cattgaattt atgccaccca tatacagcaa 70380 attactgage tgaaataatt eggetaatta ggteeageaa tatgacatet egtggattga 70440 atgctaagct gacattgtat cactgatgct ggcttatata taggttgttg agaagtgaag 70500 atgicgacag gigaaaccci gcgigcagag ciaicaicca ggacgccgcc tiicggiiig 70560 aggetatgga tigigatigg aateagtati igggiggiga tettettiat actaggiite 70620

atgtgcctct ggtccatata ccgaaggaag ccgaagaagt cctttgataa gattccagta 70680 tctcaaatcc cggatgittc caaggagatt gcagtagatg aagticgtga gcatgctgtt 70740 gtcgaaaact tccgtgtgca agaaagccac gcgatatcgg tgcaggagaa acattacgag 70800 aaagattcag ggaaaatgct ggcacacttg gttaggagta aatcgagtga tgccgataat 70860 ttgagccaat gcagctcggt gtaccaatgt gatagggctg gtagctcgta ttctggtgat 70920 gaaggcagct cgggcaatgc taggaggcac ttttctcaat atgcaactgt ctcagcatcc 70980 gatttggagc atgcaacaaa tcggttttcc aaggagaatg tcattggaga gggtggatat 71100 ggggtagttt accgtggtcg actcataaat ggaactgacg tcgcaataaa gaagcttctt 71160 aataatatgi aagagateet gaaatetati etgegtitta eagaaettgi gaeteettet 71220 gatgccatca tattaatttt cttttgatat ggtgctgcag gggccaggca gaaaaggagt 71280 tcagggttga agttgaggct attggccacg tcaggcataa gaatcttgtc cgccttctag 71340 gatattgtgt tgagggaatc cacaggtaaa gctatttatc aatcaccttt gctgatggat 71400 ggctagcttt tgtttctact ggcacattat ttacttgcat agggatgtag gattgctctt 71460 ggtctatgtc cacctactca ccagattatc tcaagggata ggttattcct gactgcactc 71520 cttatgctat cgattitttc ccttccaaat ctgatggtgg gattcagcat gcccagtgac 71580 agattatgct cagtccacag aaaccttctt tggaccacca ttcttttacc atgaaaatgt 71640 ggccatagct ccgaaagcta ggattcacta gaagcgcaca actgcttatt ggtttgttag 71700 ttggctataa caaggtetta etgaaatgta etteeatagt teattaettt gtgaatgeet 71760 gttcttgttc ttcacgtttc ttctcatgca tgttcaattc taaatttgta ttcatgatat 71820 giccaageta eigiatiete caaagaaaat cagaagicca ticacetaig tattitecag 71880 ttttccgcca ttttggatac tgctctagaa acaagttaat aatatagata tttatatggt 71940 ttggccagtg ctgcttaagt gaccatcgag atagaaattg cttaagaaat atactaagat 72000 gttgagtgtc aggtgttttc ggataatctt gttaccaaca aataggtcct atgaatataa 72060 tggtgtctgc ttcacgtaat tcaaaatcca cactcagcca aaataatctg caatagggtg 72120 ttgaaaatat gattatgttt ctcccttgtt ttcatcatga ctacagaaat gaacaatgtt 72180 gctacatctt gtaataattt gtggttttca attgaacaaa acatccatca aatgatatct 72240 acagcaatat attttgcact tctgagcaca caataggttt gagtgtattc gagtcatggt 72300 cattgattta agctttttat ticactacat aaccattgat tigagtgtat ctaaggagtt 72360

cigiticcae aagtacitta igitaaiggi giciccitai geiliggeea iccaaactea 72420 ttactgttgt ttaatatttt tagtggttag tggtgtccaa atctttcttt gtgtacatca 72480 tactalgiti itgiagicta itaaacticc atcciatcat cigaciigii ataticcagg 72540 aigctigiat acgaataigt gaataacggg aacttagaac agtggctica tggtgccatg 72600 cgccaacatg gtgttcttac ctgggaagcc cgaatgaaag ttgttcttgg aattgctaaa 72660 titiatatgi atatgittag tigcataacc cattitccat aactgaatig giatacaggc 72780 tigcitatit acatgaagca atagagccaa aagtigtaca ccgggatatc aaatcaagca 72840 acatactaat cgatgaagaa ttcaatggca aactitctga ttttggcttg gctaagatgc 72900 tgggtgcagg gaagagccat atcacaactc gagttatggg aacttttggg tatgttgata 72960 ttitttgga gitagiatta atcittccia igcitagcit tiacigiigg aaigigcagi 73020 acticgctta ticatacagi ataaaattti acatgcigcg aactitgicc ticgtatati 73080 ataacaggta gctitcicat igctatcati gaticatitc aggtatgigg ccccigagta 73140 tgccaacaca ggtctgttaa acgagaagag tgatgtctac agttttggtg tgctattact 73200 ggaagcagtg actggtagag atccagttga ttatggccgg cctgctaatg aggtgagcat 73260 atatectaca ateteatgeg tattatgtat gitacaaaag teegtaetat tggaaattat 73320 tttacggcaa aataacgtct atactaggag agacgaattt gcttcaggtg tatggctgtc 73380 tggcagitgt clacigicia gitacccitg icicacitii acagiciati gittiatiti 73440 tcaggagctg actagctgta taccitgica tatataacaa cacigtaacg tggatgcctt 73500 gcaggtgcat ctagtggagt ggctcaaaat gatggttggc acaagaagag ctgaagaggt 73560 agtigaccci gacaiggagg icaaaccgac calicgggci citaagcgig cicicciagi 73620 ggcactgagg tgcgtcgacc cagactctga gaaaagacct actatgggtc atgttgttcg 73680 gatgctcgag gcagaagatg tcccatcccg tgaggtggta acgctttctc ctttcctgca 73740 ataacattca tcatattata tcattgcaat aaatctgaag cttttgctgt aatcctactg 73800 aaggaccgga ggagccggag gggcaacact gccaatgcag ataccgagtc caagacaagc 73860 tcaagcgaat tcgagataag tggcgataga agggactcag ggccatcagc aaggtttcaa 73920 ctctaagaag acggtgatca tagtcaagaa caatggcttc aaaactctat gcagtaacat 73980 ggtggttggc agagaaaaag gggtattici ggagggcatt gcattitgta tigtaggict 74040 gcatggcggt agagactgga gagagcacag tgtctgatga tggatacccg gagacctgta 74100

attcccattc agtattctgt ttgttagtca agcagcttgt acagatcgtt gtctgttcca 74160 ttttttcatt cttctggttt ttttgtttag gaggctcttg gattaccagt acgaaccgct 74220 gtctcttttc tagaatcacc aacatggaac ctatcaatat ttactactag tactacgact 74280 tgctttcttc tigctgagat ctatcatgta ctgtacataa ctgacgtgtt cagctgcact 74340 tggacaagta gatgctcgtt ctgtatgtcg aatttacttg atgaggtcga gcattaagta 74400 ccatggctgc agccggcttc tgtttagttg tgctgacatg cggcggcgac ctcacgctgt 74460 gtggcccatt cttgatcttg ggccgaaact gtagcaacgg gcgtacggcc catctatatc 74520 gggatigite ggcccgtigt agatgggccg gategggatt gcgacttacg tgcgacccat 74580 ttcggttggg ccggtggtcc gctacttcat ctagcagtgg tcggcggcag ggttcacaat 74640 tccaatagaa tccaaacatt attggattga gttaaaaaca caaaccaatc ggctttttgt 74700 caggitcaga aaaiittaaa cigaatiita attiitigac aaaaaictai itagatiicg 74760 tctgtttttt taggtttgtc aacggattca gcgaaatccg atgatatcgc tcgtgagtgg 74820 attitigate eggiategag attgigaace ettgiegege attgeetgae aaagacaace 74880 agtgaagcgc cgtgcgccc gcgtgcgcgc cgcgtgacgc gaagatgcgc aggaaggaac 74940 aagctggcaa gcggcgcgc catgacggcg gcggcgacga cgacccgcgc gcgtgcgtgc 75000 gtcaacgcac gcgaccggcc gagatccgtc agtggccgcg gctatatata atacatcgtc 75060 gcctcacacc ccccacacac cgagtcatcg ctcgccggag ttagagttcg tagcggcgaa 75120 ggatatagcc atatattata gatggcgatt ggtgttggtg gctgctgcgc cgtgctgctc 75180 gcggcggcgc tgctcttctc ctctccggcc accacatgta agcacgccca tcttcttctt 75240 ctictictit titictitct titititit tititiggaaa igagccgcag cigacaaaaa 75300 gatcactcac acatggatac actgtcgtga cactaaccaa tgcctaagcc attttgtttt 75360 ctigititgg attiticiti itaigigiai cactitigci igitgcicii gcagaigcii 75420 atgaticcci ggatccaaac ggcaacaica cgataaaatg ggatgtgatg caatggactc 75480 ctgatggcta tgctgtaagt agcggtggca gtacaccaac atctctacct ttattttcgt 75540 ctcaaccigt acaittacac taictigiic tactaccict aataaaaaaa tatattigat 75600 gttttaaaat ctattaagtt ctagagatta ggaaagctac acatggtttt atgtttigat 75660 actattaagt agtatattit ataagttata tigaaggcig gggtitcaaa agtiigacta 75720 cactagatet tatteaaage gtetaatgat taetgaaegg aggaagtatg aacttataga 75780 cttgaagita aacagcatag ccacatcict tcatgtatac ttcatccgtt tcatatiata 75840

agattitcia gcattatcca tattcatata tgigcgicia gattcattaa tatciatatg 75900 aattgggcaa tgctataaaa tcttataacc tgagaaacgg agggagtatg tcgcaaacaa 75960 caacaacaat aacaacgagc aaaatctgta tcgaatccgg tttccctctt gtaactgtat 76020 caaagatctg tcctctgaaa cgicccctgt tcatcaggcc gttgtcacac tgtccaacta 76080 ccagcaattc cggcacatcc agccaccggg gtggcagctg gggtggacat ggcagcagaa 76140 ggaggtgatc tggtccatgt acggcgcgca ggccatcgag cagggcgact gctccatgtc 76200 caaggagggc agcaatgtcc cccacagctg caagaagcat cccaccgtcg tcgacctcct 76260 cccgggcacc ccaatcgacc tgcagatcgc caactgctgc aaggctggat cactgagcgc 76320 attcagccag gacccggcaa attctgccgc gtcgtttcag atc 76363

<210> 28

<211> 53905

<212> DNA

<213> Orza sativa Asominori

<400> 28

gatcagtaga tagagatat gigctatiga titicgicia ggattitgci gigctcitct 60 tettetete ettetete ettetete ettetete agaaagateg atgagagaa attigtagga egegitiete 120 aegaattaet tageigitaa tagateageti gatgigtaeg atatgatggi geagagtgaa 180 agitgigtig titeaciggig gateatagga taggaaatat ggattgitgi aagatgiaae 240 teaagigiti tettitiigg gattaettit ggiaaataaga getigggiga tegaaaacta 300 eagatggiti titetitiaag tigiatgate teigiagagi titigagiaa titigtagiti 360 tagaeeetti teetitiaag tigiatgate teetagaget titigagiaa titigtagiti 360 tagaeeetta eaaagateat etetageege etetagagete teeaaeettea tatgiceate 420 teetagatata atgiceetaa titietageig aaaaittiea agieggitgg tieeeteege 480 etagatatie titieagetaa titagattiti titiaaatgat aaattigeta aaageetigti 540 eaaatteege taagaietat teeaaaettea attieetetat egaaatteee ggaaattiea 600 atteaateat teeeeaaaaeta atgeegatti eegaaatat gaaeeaatgae afgaaaeaa 660 egaaggaate aaggeeatat titagtiteat eteaaaette aataeegaa aeaeaattiga 720 agtattaaat geeetaatta aaeaaaaeaa attaeagati eegeeagaaa aetaegagae 780 gaaateetatta ageetaatta ataeeateati ageaaaatgti taeetatagea eeaeattigte 840

aactcatgac gcaattaggc ttaaaagatt cgtctcgcag tttcctgacg aaccgtgtaa 900 ttattattit tictacgiti aatactitat giatgigeee aaataticaa igigacaacg 960 tgaaaatttt tatttggaac taaataggcc ctaatattct ttcaagatat tagaatagtt 1020 atccctctcc acctccctgc acaaacagtg aacttctttc tccttgggca caggagtagt 1080 agcagctccc ggaaacagaa agcaatcaag caaagtcctg aacctgaagc atcctgaaac 1140 cagcagacgg cagaaaccag tgggcgcagg cgatagcagt ttttcgtggt ccggcgtaca 1200 gccaaaatac tggccatcgg gtgcctacat agaatgagtc cactggacgc agctaccacc 1260 gtgtgtgcta cactgaccgc cgctgctcgt cgaccagttg tacggggctg acttattctg 1320 aatttctaat ggtttatttg ggggtttaga acactgaggg gtgctttaga tccaaagatg 1380 tgaagttigg gcgigtcaca tcgggtatta tatatagigt cgcacagggi gittgggcac 1440 taataaaaat actaattatt gatcctatac gataagctat ataatactcg atgtgacacg 1500 ccaaaacttt acatccctga atctaaacac ccttttaaat agagtatttg gtgtgaaata 1560 taattttgat tigggaagaa ggigagigag aittggaaaa aaaaagcatt tcaattaaaa 1620 aatttgccag cagtaaataa agaaactact cggttttgta attaaagtga ggttttggca 1680 ctictitgcc ctaaactggc ciccattita taaagtgaga accgtgcagc aaaagcctga 1740 aaaggcaaaa agaaagaaat tgtagaggtt tttcaggagg atacaactag gtgggtctct 1800 aactctctat gcagctgtgg tctgtggagc aaaacgatga aatggaagac gggacgttga 1860 cgagggtgaa gaaaacgagc gtttgaccag cgtcaaccat ggcgtgaaca gtagcaccac 1920 taacctgacc gagaggitga agaagatgca atcaacgggg tactatagtt cccacgaatt 1980 tcccagcaac aacgggitgg tictcactac tcacgaattc cctgtggctc aacaactact 2040 agtacatect tttgtccatt atgataaaag ttetatetta atttttattt acaegttttt 2100 caaactgttt titaattitc tatataaaaa atacttaaaa tatcaaataa aatctatttt 2160 tggagtttta aaaaactcaa ttaatcatat atattattga cttattttat tttacgtgga 2220 ctaaaatate tteatettea tttaggtiat gttetttet eateaagata eatgatacat 2280 tagcatgitt ticaaacigi tiittaatti igtatataaa citacictaa aatatcaaat 2340 aaaatttact tttagggitt ataaaagtaa aactcaatta atcattacta acttgtttca 2400 ttttacgtgg actaaaatat cttcatcttc atctaaggtg gtgtttggat ccaaggacta 2460 aattttaatc cctatcacat cggatatttg acactaatta gaagtattaa acatagatta 2520 atgatgaaac ccattccata accciggact aaticgcgag acgaatatat tgagcataat 2580

taatccatga ttagcctatg tgatgctgta gtaaacatgt actaattacg gattaattaa 2640 gcttaaaaaa tttatcttac gaattagctc tcatttatac aattaatttt attgttagtt 2700 tacgittaat actittaati agiatacaic cgacgiaaca cigatcgata caaacaccaa 2760 ctaaatcgaa aatcaccgaa tggctcgtca tcctcccaca tgagatgcca agatggaaca 2820 ccaacaatcc aacggctagg aagcgcccca tcccacccac cgcctaaccg ccttcctatg 2880 caagtgggtc ccacccttc cttcctttt ttttctttt tacaaatccc cttccctttc 2940 ttggctagct agctagcttg gcccaacgcc acgagccgag ccgagcacat ccggagccaa 3000 gccgagctca gcgcctcagc tccccctcct cctcgtccca ttcccggttt cctcctccga 3060 tttcccccaa atccgcacgc ctctcccctc cgcctccatt tttcccgatt cccaattccc 3120 aaatccggat cagccgcagc cgcagcagca aaaaatttcg aaatccaaat ccaaacccat 3180 aaatetetet eteetete etatgegege egeegeege geegeageag eageagetag 3300 gaggcggagc agcagcagca gcagcagctg agatgatcgt gcgcacctac ggccgcagat 3360 cccgctcctt ctccgacggg ggaggagggg agcgcggcgg cggcggtggg ttctcgtcgt 3420 cgcaagacgc gttcgaattc gacggggagg aggaggacga cctcgtcctg ctggggtcgt 3480 cgtcgcagtc gtcgcacccg cccgcgccgt cgcaggagtc gtcgtcgatg tgggacttcg 3540 acgaggaccc gccgccgccg ccccggcggc ggcgggggag gggtgggggt ggggactacg 3600 cggagcccgc cacggcggcg gcggcggcgg cggcggccac ctcgctcatg gaggcggagg 3660 agtacggcga gatgatggag agcgtggacg aggcgaactt cgcgctcgac gggctgcgcg 3720 ccaccgcgcc gaggcgggtg cgccgggcca gcttcctcgc gctgctcggg atctgcgcct 3780 ecgegeegeg ecgeegete eteegggeee aggggteggt acaccaaaga acceteettt 3840 tttttttttt acttgtctgc gctgtaagta aagaataaca attcgcgttc ttgctcttgc 3900 ttcgcgggca atcttggtga ggaatcttgt tagggttatg aaattgggca gccagttctt 3960 gtitctictg cgtaatcitg gcggaaacag tgggattitg tacgattatg gctccgtaat 4020 cggcatttct gtgggaaatg aaccaccttt agggcatttg accttcgaac agcatgcttg 4080 gtgttgcaat ccgtagctat tgccttcatc ttaggcacaa gaacttgttc tgaattatga 4140 tttaccaact igigitigit itcitgitci gagititcii gciiggitag ggitagggit 4200 atcaccgtgg tggtgcagaa itagatgitc gctacttgtc ttaacctctg ccttgcccaa 4260 ttiggtaccg agigtiacag cigggiitag gaagigigai citigagcai ticiagcaig 4320

ttggtctctt tattttgcta atctcacatg gttgtagagg aaggaagcat agtgactgat 4380 gatgaatgcc tagatactag aaatacatct ttattaactg aattaggatt gcttgggtat 4440 ctatgtagat atgactgtag aatgttactg ctggaaatgc tatccaatat ccattgatct 4500 ctagcctaat atatctctcg aggccaagag atcagtcaat tttgaacttt caggagagtt 4560 totattiggt actiaatoto tittattigt tactitiggt gootggotot citticatga 4620 ttgctaagta gacaggtaaa gttctaccta aaattattct taaaagttca aaatcgcttt 4680 agattaagga gtgccagcca gagccttagg cagagtctta taaaccaaaa gcacaatgct 4740 acaatgtica caaaactttt giggaattic cactigaget gtataaacat egcaatetac 4800 tgtgaataaa agaagcactt gatggaagtt catgttagca aatgacatgt tttctgtgag 4860 gaggitgatt gcttgaactg ttatggactc ttgcaacttt ttattttact tcgtacccat 4920 ttatgctaat gtgcacaaat aaaattgctg agagtaaaaa tgtacaactt gttacgcacc 4980 agcacacttc ctattigtat ccatittcct gitgaattic aaatgtatic aaitgctgaa 5040 attgttccat tcaacaaaca catattccgt taatgaaatt attatacatt gcgttttgtt 5100 ttcttactca caagigicci citticitai aicciaiaga tiggigcaac aaattatiga 5160 tgcaattitg gttttgaaca ttgatgatcc tccctgcact attggtgcag ctgctcttct 5220 attogittig gcaagigaig igagiaccic icaaicccai cciigigcii cigigcaigc 5280 ttcattctat tttttacgca tatcgattgt tttcttttat ataacagccc ataaaaataa 5340 tcacatcatg gcaaagitat itatitcicc agiacagita talaagiati caccaciitt 5400 ccatgaatat ctiggcatgt gattacaaag aagattattt aagaaagtcc atgcttttat 5460 ttcatcattt tgtttgaagt tgaactttaa tttatggtgt aaatttcagt taatattgct 5520 agcagctcgt attettaat ggcataactt cacttgtget tattetecaa tateteeett 5580 cttgttgttc aggitcaaga aaatcatttg ttggattcag aatcttgtgt ccattttctt 5640 cttaaattat taaatcctcc agtgaatctt gttgattcca aagcaccatc gataggttcc 5700 aaacticitg gaatcagtaa agticaaatg citaatggat caaataagga tictgactgc 5760 atticagagg aaatccitic aaaagtigaa gagatictci taagcigtca agagatcaag 5820 tcgctcgaca aagatgacaa gaaaacaaca aggccagaac tgtgtccaaa gtggcttgct 5880 ttgttgacaa tggaaaaggc atgcttgtct gctgtttcag tggagggtaa gttttaatca 5940 aattictigg tcatgattic cctttatgac cattataatt attittatga gccaaataag 6000 cagttgccat aagttacata gcacctgtti acaatattca tgggtggtti gcttagccci 6060

ttgcttcacc tgcctttgat tgatgacttc catccgtgtt gcacaactga attggagtaa 6120 ttgactgcac tagaagcacc tatggccatt gtcatactag gaaggttitc ccttatcaaa 6180 tatitgatig ttacagagac tictgacact gigiccagag tcggaggaaa tittaaagag 6240 acattaaggg agttgggcgg tcttgatagt atttttgacg ttatgatgga ttgccattca 6300 acattggagg tgagateteg etaacatege atattttaca etteetttgt teaactetaa 6360 aggatggtgc aagttttgtt cctttttgcc attttagctt taatgtgctt gaagccacat 6420 gaaagcaatg ctigiccaga tacatagcca aaggtigita tattitggga caiggaaaat 6480 gcttgaggta gtaactattt tcatcaggac atggaaaatt ggctgcatca caaattatgt 6540 tgtttcatgt tgcaaaatag ttttttaata cttttttatt ctgcatgtgg tgttagtgtc 6600 ttacagtgat tcctctgatg attatatccc ccacgataat aatacttgac atatctacac 6660 caagtggaca ttattcattt ggatgttact tttccagcta tacttgctgt tcttgcataa 6720 actitggagt aaattgcgta tccctttaag agataaactg cttggtgctc ctatctgtgt 6780 acittitatg cccccaacta ataatgcaat catattacgc tgataaactg aataaataaa 6840 ttaacaatat acttctggtg gaaaccttgt gtatcagaat ctcataaagg atacctcaac 6900 ttcagctitg gacctaaatg aaggaacatc tttgcaaagt gccgctctcc tcttgaaatg 6960 tttgaaaata ttggaaaatg ccacatttct aagcgatgat aacaaggtaa tgttccttat 7020 atattctgtt tcagtttagt acccattttc ttcttctgta ccatcttctc ccctcatttg 7080 ttctgtgcaa aatgtgcaaa cagtgtgact ttgtatttct gcttaacatt tttcttttt 7140 tcctgaaaag cagtataaac tcttacactc attttgcttc ttgcagaccc atttgcttaa 7200 tatgagtaga aaattgtacc cgaaacgctc ctcgctttct tttgttggtg tcattatcag 7260 tattattgag ttattatcag gtatttttct taataataca atatgtccgc taacacaata 7320 aaatgittta aacatccagt aigitaaagi igcagiciga cgcciaitti giitigcigc 7380 agctctttca atactgcaga attcttctgt tgtttccagc tctacatatc cgaaatcgtc 7440 taaagtotot caacagagtt gototggtaa taacaaacac caaatttgtt tgatcaactc 7500 gttggctttt ctgtgcactg tttcaatata gtttggtcgc cattcaagtc tcactacaga 7560 tgttgaactt gacctgacac ggtggcacca atatttataa aacgctacct gatattttta 7620 atatttcatg titcctgacc cagattatct igitggitcc tcatataagt ttaattagig 7680 tcgttcttga aactttgtta tgcagcagat gtcatggggg gaacttcatt taatgatgga 7740 aagogcaaga actogaagaa aaaaaacott tigiogaaco agacaogoca tagiigoita 7800

tcttcaaaat cagaagtttc tcatattact atatcttctg gtagtgatgc tggtctgtca 7860 cagaaggcat tcaatigitc iccaictata tcaagcaatg gggcatcaag iggitcatta 7920 ggcgagagac atagcaatgg tggtgctttg aagttgaata taaaaaaagga tcgtggcaat 7980 gcaaatccaa ttagaggcic aagtgggtgg atttcaataa gagcgcacag ttctgatggg 8040 aactccagag aaatggcaaa aagacgccgt ctatctgaaa atgtaatcac cgacagtggt 8100 ggcggtgatg accetittge tittgatgat gitgatcagg agceticaaa itgggaacig 8160 ctiggiccaa aaaagaaatc gccicagaaa catcaagaca aatcaggaaa iggagigcia 8220 gttgcaagtc atgaaccaga ccaacctgaa gatcttaatc agtcgggtac aacatctctt 8280 tttagtgcta aagatgaatc cagtcttttg gaagactgcc tcttggcatc agttaaggta 8340 attaaatatg tttccttctg atctttcttg tttcttcttc aagagaatat acattcttgg 8400 gicacagitt cicggitigi citigigaci tigitgagig acatattitg aattcacaaa 8460 atticctitt caataigget ecicaateia tageateigi egigiaigia tietgiacaa 8520 aatagtattg taacatctcc tagaagaaat tggcaccatc catatcatac agtagcaatt 8580 tatgagacgt gatccigati ggaggtttag gacagagcct cgagctaaat tgctattgta 8640 tigiatciac taictitiag tacaigatai gigcigggca cicigigici gagigiagig 8700 agigcitaag titacatagi icagciaaca igcataigia agacagitta igaitaaati 8760 taagtgtaga aagaaggtac tttcaaaaga tttttaagga caatataatt gtttcaccgg 8820 gactcatgct tgttctgact gtgagcctaa tgttaccttt acatgccctt acattgtcta 8880 tititateg tittatgaga tettecaaac aactigatet giettaatgi tittitgeta 8940 gctcctttct tggatatctg gtaaatggtt aggccgaagt atgaactttg ccttattgtt 9000 tcaaagaaaa tgtaacaact cctggaaaag tctaattttg gttgcccttt attttgctga 9060 ccgtattggc acacatctaa ttctgctgtt cctttctggc aggitcttat gaacttagca 9120 aatgacaacc catctggttg tgaattgatt gcgtcatgtg gtggacttaa caccatggcc 9180 tccttgatca tgaagcatti cccctcattt tgttttgtcg tggacaacaa ctataacacg 9240 agagatgica atcitgatca igagitatca icticicaaa acagcaaggc acaccaggic 9300 aaaattaagc aattgcgaga tcatgaactt gattttctgg ttgccatatt gggcttgctt 9360 gttaaccttg tagagaagga tagccttaat aggtaagtcc ctcacatgct tccttccatt 9420 tgctcaattc atatcagtgt tactgttctg gcagttcctt ggggtcagga ctcagaaaca 9480 tccaattaat gttcatgttc tcttaacgac tcagaaatac tttataacct ctccacaggg 9540

tacggctttc atctgcccgt gttcctgttg atctatctca gaatccacag agtgaagaga 9600 cacagagaga tgtcatagca ctcctctgtt ctgtattctt agcaagtcaa ggtgctagtg 9660 aagcticigg aactatatca ccggtaattc aaaattcttc aagttccttt tgtatgtaga 9720 ttatatcttt gtaaaactcg gcatttatta cctgctcttt gtttcaaaaa gcagtatttt 9780 attttgctcc ttagcatagg tcagcagaac agttgatctt attcagaaaa caatattttg 9840 catgiaacat actgitatet atgagatgaa aattaatgea tgigtaataa tgicaatgat 9900 aaatatttgc tatctgaatc cagtctacca actctagtta gaccgaaatt actgaggttc 9960 tatttcaaag aataatttag tgcaccattt gttcaactac tatgaagtaa aatggtattc 10020 ccttctattg acatcgggtt agaagtgaaa ggccatctta atgcaatgtt ctcaatgcca 10080 caaacccaca aatttcatta acacatacag attattatta acatagctat aaattggatt 10140 tccagaagct tgagttgaat ttattttgtt acaattgaaa gcactgggaa cattagcatt 10200 tttttttagt tcttggttat tgcaatttat aatgttatac agaactgtgt acctcacaat 10260 gcattcatta tgacattcta tgaaccattt gattgactgt tgcttgtaaa caacaggatg 10320 atgaggagto titgatgcaa ggagcacggg aagctgaaat gatgatogta gaggcotatg 10380 cagcccttct tcttgcgttt ctttcaactg aaaggtttgc aatctgtagt tgatggattg 10440 ttttattaat gictaactac tigcataatg tcagcactat ggcatttaac ttatactgtc 10500 tgttaactgc aacagcatga aggttcgtgg agccatttcc agctgccttc caaataacag 10560 cttaaaaatc cttgtgcctg cgctagagaa atttgtggta tgtctccata attcttgaac 10620 tactgtttgt ataaaaaagt atggatgatc tttgaattta ctccattttg gaaatcatta 10680 attiticatg totgaggigt gaggigtoac cataattgia citcocatco aggaagcoig 10740 tttgcaaaat ttcacataaa taaggaaaat ttgaacttgt ttcaagtttg aatagtaaca 10800 ggatgtttta tttctcaact ggagaaaaca ttccggctgg gacttttaac ccttaaaatg 10860 ctagtgtgct cccactgtaa gattgtctgc tgtcacattt gaaactttgt gtaatacctt 10920 tatcactacc citgagatga gagacacaat ciggtaccga gitaagitat igataactcc 10980 cagtigaagt acagcaccaa atcaagccaa catgtiggct acgtaattaa atgticicti 11040 acaacagata gaggtaaaaa gggagtttct aagtatctaa cctcttaccc tcttggctta 11100 gcactccagg cacaactctt tcttaacttg cgatttagga cttgactctg agaatattgt 11160 gtgcccacac tggttgagtg catgcctatc taagctgcta gtttttgttc attttgatta 11220 actctgaagc tgcctgagct tattctgctt ccatcattta ttaatccatc atgtttctct 11280

ttcagtcgtt ccatctgcag ctcaatatga tcacagagga aacgcactca gctgtcacag 11340 aagttatcga gaaatgcaaa ctttcataga aagagtgaag aggggcctgt acagatcaac 11400 taacaacctc tttgcagcaa aaaagcatac acacaagtgt ttgtcttggc ctggggctct 11460 gcagatggac tgatactctg acctgcagtg ggcttgggag ctaacaatgg tttcattctt 11520 ttttttttta tgitttcccc tgitgititt gctcatgitt tgtgtaatit titcttctca 11580 tctagcgatg ttattttct tagcatgatg ggagtagccc tcctttttt tttctctaat 11640 taagigtaaa giagcaacag catagggaig aatgiicagi giagigtgig gigtiicagi 11700 taticagaga cgiccataca gittgiacci igigaccaca cgictiaaic igaigaagci 11760 tagaataaat cacatgttag caatgcaata tcatctgcgt cttctctcac tttggtggcc 11820 atcaaattct gtgtagaagt gtatggttgg tgtgctgttg caaatgccgt attccgctct 11880 gttttgtgga agttaagaag tccctagttg aaataccgat ttttcatgat ctcggagatt 11940 gatgcaactc tgattgcagc atttctttt attagaatgt acactccatg ctatcatgat 12000 gtttattgtt tagtactaca agatttggtt aaccattatt ttaatatcat aataatttta 12060 taaaatcttg gagtaacaag ttcataatac atgatagcat aactttttga ggctagtcta 12120 tgtatattgt ctcctttgtt tttaaactaa gcactcaata aattattgat ggctgtaatt 12180 ttctgaaggt ttcaccggtt tcggcccgtg ctttataaat agcttcggca caaaagacaa 12240 aacggtccct ccaacacata aatggttgag tttacgtttt cattatcttt ggtaaaatca 12300 agtccaccac gtagacactc ataacaaaag tttgaatatc ctcagaaatt ttgacttgag 12360 tctatcttac ctttgatatc ggacatccaa ccctccctcc ctccctgaac tttatattat 12420 tcatattaca cctgaacttt atattattca tattacaccc tgaagtggtt ttcatttaat 12480 tgcatacatg ctgaaatagt ttgacaacgt gagatgcaca aaatctacac gttcgtctta 12540 agtigcaatt cattitatcc cititcitit icicitata ataggaatat caatagtact 12600 aattcacatt acaatatagt ataaattggt gatcgattat tggcaatata ctatattaaa 12660 tattcaaaac tagtcattta agctgccaaa taagtaaacc actatcgaaa accacaatat 12720 aaatggcatt acaaaactta gggggttgaa tatccaattt taaagttcat gatgctagag 12780 gaatttctat caaaagttta tgggtacata tggacttttt cctttttaaa agaagctatt 12840 cttatcgtaa acgttaaata tttttgtac tttattttt atgattgaaa aaaaaactta 12900 gttttcaaaa igatiggici gtatacaagc atcaattaga cttaataaat tcatctaaca 12960 gtttcctggc agaaacigta attigttiti gitattagac tacgtitati atticaaatg 13020

tgtgtacgta tatccgatgt gacaaccaaa cccaaaaatt ttccctaact ccatgaggcc 13080 ttacagatat attigatggg tgtaaagttt tttaagttct ttgggtgcaa agtttttaaa 13140 gtatacggac acacattiga agtattaaat atagacaaat aacaaaacat attacatatt 13200 ctgcctgtaa acaacgagac aaatttatta agcctaatta atctgtcatt agcaaacgtt 13260 tactgcagca tcacattgtc aaatcatagc gtaattaggc tcaaaaatat tcgtctcgta 13320 atttacatgc aaactgtgta attggttttt tttttcgtca acatttaata ctccatgcat 13380 gtccaaatat ttgatgcgat ctttttggcc aaattttgtt ggaatctaaa caaggatcaa 13440 atttgctgaa tttttccaga cgtcacggct tgttcatcca tcgttcgcat cgcgattcgc 13500 caccgacgcc ttggtttcca acgaatttta tcatccgctt aaatacatcc aaagctctcc 13560 atcgccatcg gcggccaacg gcgaccgctc cgctctaccc aatccaccca tccactcgcc 13620 gccgcccct gatccaaagc ctccgccgcg ccgccgtcga gaggaggagg aggaggagga 13680 ggaggaggag gaggcgtgag cccctatggg gaccctcctc cggccgcgtc cgctcgccca 13740 cgccgccggc gccggcgacg ccacgccgtc gaccgcgcac ggtagccacg cgcctctcga 13800 gaggccccc ccccgccgct cgctgatctc tcttctcatc ctgtttgggt ttgggtttgt 13860 gatttgggtg ttitttttt tccgcagcgg tggtggtgag cggtggccgc ggccgtggcg 13920 tggagtgcca gccgcatcgg gtgcgccgcc gcccgggtcc gcaggttgcg gtggcgacgg 13980 cgagctggag gaggcggagg gagaccgtgg tgagatcgga tttcgccgct ggtggtgccg 14040 ctaccatggg ggattcgccg caggcgctct caggtttgca gcctcctcca ctctcttctc 14100 gcaaaatgtg tigctatgtt ccictcgctg ggctggcctc atagccatta atgtagtttg 14160 ctggaacatt acattcggaa cgitgttggc aattgcttga caaaatgtgg aattgtggag 14220 gggagaaaaa tcgtttgaac ctgcagtgac aaaattgcca tctataattt taaaactgaa 14280 ggtgtggaaa tcaaacataa tcattgccag cacatcattc ttgttaacca ccttgacata 14340 ttgttggctt ataacagtta gctccacacc aacttggaag gtgtcaatgg aatgtaagta 14400 taaattgagg ataactggca gttgttaaga ctttctacag aacttgtagc agctaaaact 14460 agctattgtg catttatgtt tcatggaatt tgagcggcaa tggatatttc ttactaagac 14520 gtataatgca aaacaaaaaa aaaaaaaact atgtctatgc agtttacatg taatgtgcgg 14580 atgcaaataa aatcatgttc atggacaaac taatgggatt cataccaaat tccagaattg 14640 catticttat giggitacti tigitigiig attiggitac cagacatcga igiggitica 14700 agggtcagag gggtttgctt ctacgcggtg actgcagttg cagcaatctt tttgtttgtc 14760

gccatggttg tggttcatcc acttgtgctc ctatttgacc gataccggag gagagctcag 14820 cactacattg caaagatttg ggcaactctg acaatttcca tgttctacaa gcttgacgtc 14880 gagggaatgg agaacctgcc accgaatagt agccctgctg tctatgttgc gaaccatcag 14940 agiticitgg ataictatac ccitctaact ctaggaaggi gittcaagit tataagcaag 15000 acaagtatat ttatgttccc aattatigga tgggcaatgt atctcttagg agtaattcct 15060 ttgcggcgta tggacagcag gagccagctg gtatggctgt agtctcatcc ctgctttctt 15120 aagtagacat atatacatti acagtattig gtaaataaac aagatttiat gaatcatata 15180 tgattitggg gaaaacacaa aactototti giiggoigoo iigaacatag iicigiicac 15240 acagttatag caccitciti aaaaigaaga aciitgitgc atacacataa ggccaaacca 15300 cataatgaat tiigittati totatottig aaigitagoa togittiigi tiaatgoaig 15360 atcgccttcc tatatatttg tagtatgtca acattgtatt ccatgctgag cataacaaat 15420 ggtttgttaa aattcaggac tgtcttaaac ggtgtgtgga tttggtgaaa aaaggagcat 15480 ctgtattttt ctttccagag gggactagaa gcaaagatgg aaagctaggt gcatttaagg 15540 ttcagtaacc aaacttaggt tacattacat ctaatgagat ttttatattc agtatataat 15600 gtfaaccttc tcatggtgta ctgacgtggt tataaatgtc cccagagagg tgcattcagt 15660 gtggctacaa agaccggtgc tcctgtgata cctattactc ttctcgggac agggaaactg 15720 atgccttctg gaatggaagg catccttaat tcaggitcag taaagctcat tattcaccat 15780 ccaattgaag ggaatgatgc tgagaaatta tgttctgaag caaggaaggt gatagctgac 15840 actettatte taaaeggita tggagtgeae taaagaaaga tggtgttttt ttttattata 15900 tggaacctat tcaaaggcac agacaggctt tcaaggctaa gcttgttaca ggtactgata 15960 acatttctgc acttggtaaa tttacagaag aggcaagtaa tattttagag gattgagttt 16080 attcacccag tcatatagtt gaagaggcaa gtaacctgta agagaggact gaacattaac 16140 acctcttgtt cgattaaaaa tgaccaaaga gcatcaaaca tgtattcgag gctgttactt 16200 tagatatggc ccattaattt gittagitgt ciatgiacat cciagitggt giaaatgcca 16260 gttaccattt ctatgatcta aaacaatcaa ctcttttagt atattttcaa aaacgaaaat 16320 tcagtacaca tgtatgaatc ttaatattct tctctagctc gttacaaaag caacaaaggc 16380 accgtgtcag ctggttcaca ttagctagtt tgtacttagc attatccact agcaccttat 16440 tttcatgcat atcatgctaa tttgcttgcc cacgttgagt gggaattttt ttcatgtttt 16500

ataatitata taigititag actictagic cacaatitat giacticatg ticcigagec 16560 tctagtatgg ctgatagcag actaggtgct gagtgctgtc cttttttgca gactgaagag 16620 agaagaaata caagactgtc cattgttagt cagatttgta aaaatagact ctgatgtagt 16680 ttactttigc ccctatttta tttttaacaa tacaaatata taacagatcc taagaactta 16740 tcttaattta ggagaagttg cicgtticat taaattaaat tgtgaagtaa aaatgtgtgc 16800 tcgagtctgt caatgcaatc ctgtgttctt gtttgaagat atggtgtagg gcaggccagg 16860 attgaacact gaatggtaag actgcttctg ccttcagacg ttattgctaa atttttagct 16920 actigcagit agigcigcca cgccgattaa gcagtagaac aaagtagitt tgicgigcac 16980 aaatgagtta tatttcattg gaaatcgaag cgaaaacgaa tcaaaagtta gaagaaaagg 17040 ggaaactigg taattactcc ataaagagag tgcattitat tggtaagatg gtatccggaa 17100 gcigigagci ccgggcigia igiaticigg caaaitigat aigagaigci cgattatigg 17160 cttaagttag cgatatcaaa tttggggaag caccaaagga attattgtga aggagttatg 17220 ggtgcgtgac gttatctgct aggttcaaat ccttgtggct atgaatattt atctgctagg 17280 gtitctitaa gatigigcca icggacgcca ticggiaaci giaataaigc tiigiatigg 17400 attcacttgt gttacatgca cgcactaaac atgtgcttta ccttttcatc tgtttttgcg 17460 ttctgggcta gaaactcaaa cgttgaattt tccatggtct gctcaacttg acaattactg 17520 cgigtcaagc gaictiatac gcatactatg cgcacaagtg attgtatacg gatatgatga 17580 cagtataacg tgtgatattg attititaa taaaaaaaig atgttcctit ccttgatgaa 17640 ggaacaaaga cttttttaa aagaagggta ttactaaaaa caaaaatgac aaaaacaaaa 17700 tatcagtgca catggcaagt gtgctcggca attititcic tgtactttaa acaaaaatac 17760 ttctatatgt tctttttat aagggtggca caaatctttt aaatgagcca aatatctaca 17820 ttggatttat taaaaactgt ataaattata atttatactc tgaaaggttg tgtgcatctc 17880 tcttggagaa aatgtataag ttgcaaacaa acattaatcc acgttatgta acttttttc 17940 gccggaaagg ccgaaggagg cctgacggag cgtggggctc ctcaccggga gaccgcgcag 18000 gcccccttt gccggttcgg ccggggactc agggtgaaat tctaagctct ctgtatgtgg 18060 aaggticgcg accgicgaaa gagcataaga cacgggcgat giatacaggi tcgggccgci 18120 gagaagcgta ataccctact cctgtgtttt ggggggatct gtgtatgaag gagctacaaa 18180 gtatgagcca gcctctccct tgttctgggt tccgaatctg gaaaagtcca gtccagtccc 18240

ccccictaag tgggcaaggt cctcctitta tatcitaagg ggataccaca tgcaccatct 18300 ccctcctttc tgtggggact taccctacct tttcataaat ggacggagat ttgtatagtt 18360 gccgtccgaa tgaccttctg ataggacggc ccatacctac ctccacttcc gccgaaagca 18420 ggtgcgacgt gggattatgg ctgtctgctg acgacatgac cagtgtcaga ctggtcacaa 18480 attgctcatt cctgtccacc acgcgtcagt ttagcaatct acatgttggc ccttcttcac 18540 acaacatett geetgtaatg gttaggatga ageetggeat atatetaace aggaetaacg 18600 tgccatctct aggaggtaac acgctagctc cagctgggga cgagcgccta gaagccctcg 18660 tcctgacggg atggggcgag gcgtgcgtca gatcgcctgt cgccacctaa cccgcgatct 18720 gaccggtctg tgactggtca cagaccggat aaacgagtgc actgcacttc gttacatgcc 18780 gcgtgacacg ctcagccaaa ccgcaataaa tgtggttagg tgagccccgc tgtgctcacc 18840 taacccatac acgcggagca aaaacccacg aggggtcggg gcgcctcggc cctcggggcc 18900 gaggcgggtg cggtccgacc ccctcggggg gactaagagg agggcgaaca catcaccctc 18960 gggcccgacg tcccccgagg gtgccaggcc acgtgggcga ttgtgtctgc ctcaaacctc 19020 tagicatgat actectgate ceatgicace gacagiagee eeeggegita tgccagggeg 19080 atcgccctct ttaagggaag cggtcgggcg tgacgccact cctaaggcct ggtgacaggt 19140 gggaccggtc tccacaattg ggcagaaacc caacggtcac aaatcacgca catcggcaat 19200 ggiaacicta ctatcaataa tgagcggici cttcaagact gccacattac tcgagtagca 19260 cacgaatetg gacatggcga ttcgtttcgt ctggagatat ggtaacgtcg ctttggtcgg 19320 cgagcgtaat taacgcgcgc acgatatgat ctatctcgac tgccacaacc gcatatccac 19380 ctcatgcgcc gcaagcggcc gaatgggatt agtggaagcg tgggcgcgag aaacgagggg 19440 gcgaaatagt gggcgcgaga agcgaggagc cgggcacagc gttggcaaga gtataaaggc 19500 actgaggaaa ggatctgttt ccttcctttc gccatcattt cccttgtctt cgccgcttgc 19560 gccctaactc cttctttcct gtgctctact ttcgccacac gcgctcgctc tcaatcttct 19620 cttcctccgg cgccatggca cggggctccg ctctgctcga tggtagcgtg ctgccgcctt 19680 cccgcatcgt gagcgagagg caggctgggc tgccgcgccg cttcatgccg gaatctgcca 19740 ccggccggga gatagtcacg ctgggtgagg gacgcccggc gccagactac ccggggcggt 19800 ccgtcttctt tctccccttt gcaatggcag ggctggttcc gccattttct tctttcta 19860 tggatgitci gaagiictac gaictccaga iggcgcacci cacccccaac gcggtgatga 19920 cattggccat cttcgcgcat ctgtgcgaga tgttcattgg ggtgcgccca tctcttcggc 19980

tgttccggtg gttcttcacc gtgcagtcgg tgtcgccgcc atcggtagtt ggtggctgct 20040 acticcagec atgggggeeg gigetgaate getacatece etgegeeete egeaagaagt 20100 gggacgactg gaagagcgac tggttctaca ccccctcgc cgacgaagcg cgcctctgac 20160 ttccgagcca gcccccggcg caggcctcca gctggcgggc gccggtagat ctgggggatg 20220 gctatgacgc cgtcctcgac cgcctggcgg gcctacgatc ccaggggctc acaggggcca 20280 tggtgtacgg cgactacctc cgtcgtcgga ttgcgccgct ccagcggcgc gctcggggcg 20340 cctgggagta caccgggtcc gaagactaca tgaggaccca ccagggagtc agatgggact 20400 gggctcctga ggatttcaag atagtggtcc aacgggtgct gaatctcaac tccatggagg 20460 cgicccicai iccccaagga atcciccic icigcagcga iccagaccgc gcciccaicc 20520 tgaccattat gacggcggtc ggggcctcag aggagtgagc tccaaagggc cacgacggcg 20580 caggcgggag ccgtaggggg gatcaatcta ccccgggagg gggtcgtgct tctgggtctc 20640 gcgacggagg cccgaggagc agccgccctg ccgacgcccg ggggaagagg aagcagggag 20700 gaacacctcc cccatctcct ccccgagggg gcggggcggt gcgtgccaac agcaggcgcc 20760 cggaggggc cgcgccgaca tcgcagcccg agggggagcg caagaagaag cggctccgca 20820 agatggggga gacagaacca tctcggggaa accttatttc ccctccaaag tggtcgttta 20880 accgaccccc tcgcaggttc gtctctcacc catcgtggct gtattcattc tctcaacgcg 20940 agtiticact cacccatcti giicgictic tggictitic tictgitica gcgagatccc 21000 gtcgcgtccc tcccgccatt ccaagtccgg ccagtctgag gccgaggatc cggcggccgc 21060 agaggcccgg aggcgggaat ctgaccggcg agaggccgcg gatcgcctac gggaagccga 21120 ggaggccgcc caggaggccg cccgggctcg ccagggcgag gaaaccgctc gggaggaggc 21180 cgcccgggcc cgccaggccg aggaagccgc tcgggaggag gccgcccgag cccaccaggc 21240 cgaggaagcc gctcgggaga aagccggatt tcgccaggac gaggcaatgg cgacttccga 21300 ggcagctcgc gatgaggtcg cgggcgcgtc gcttgagccc gcttcctcgg gcgacgctca 21360 ggcgacaact tccggggcag ctggcgacga ggctgcgggc gcgtcgcttg ggcccactcc 21420 ctcaggcgac gcccaggacc aaccaggict gagggacatc cccgagiccg gcacticcat 21480 cggcggcccg agccgcgtgg catcctctcc aaggcggctc ttccccacgc cttctatcgc 21540 cccgctgagc gcagagcccc ttctgcaggc cttggccgcc gcaaacatcg cggtgttgga 21600 cgggcttagt gcccaggtgg aggccctgca agcagagtgg gcggagctcg acgccgcgtg 21660. ggcgcgtgtc gaggagggc ggcgctcagt ggaggccatg gtggaggtgg gccgcaaggc 21720

acaccgccgg catgtctcgg agcttgaagc ccgtaagaag gtgttggcgg aaatcgccaa 21780 ggaagtggag gaggagcggg gggctgccct cattgccacc agcgtgatga acgaggcgca 21840 ggacaccete egeetteaat aegggagetg ggaggeggag etagggaaaa agetegaege 21900 cgcccagggg gtgcttgacg ttgccgctgc ccgagaacag cgggcggggg agaccgaagc 21960 ggcgtcccga cggcgcgaag agacccttga ggcgcgcgcc atggcgctgg aagagcgcgc 22020 ctgcgtcgtg gagagggatc tggcggaccg cgaggccgcc gtcactatcc gggaggcaac 22080 actggcggcg cacgagtccg cctgtgccga agaggagtcc gcactccgcc tccacgagga 22140 cgcgctcacc gagcgggagc gagctctcga ggaggccgag gccgcggcgc aacggctggc 22200 ggacagcetg teecteegeg aggeagegea ggaggageag gegegeegea etetggaatg 22260 tgtccgcgcc gagaggaccg cactaaacca gcgggccgct gacctcgagg cgcgggagaa 22320 ggagctggac gcgagggcgc gcagcggcgg ggcggctgcg ggcgaaaacg acttagccgc 22380 ccgcctcgct gctgccgaac ataccatcgc cgatctgcag ggcacgctaa actcgtccgc 22440 cggggaggtc gaggccctcc gcttggcagg cgaggtaggg cccggcatgc tttgggacgc 22500 cgtctcccgc ctagatcgcg ccggtcggca ggtgggcctc tggagagggc ggaccgtaaa 22560 gtacgccgcc aaccatggag gcctcgccca gcgcctctcg aagatggccg gggctctcca 22620 acggctcccc gaggagctcg agaagacaat taagtcatcc tcgagggacc tcgcccaagg 22680 agcggtggag ctcgtactgg cgagttacca ggccagggac cccaatttct ctccatggat 22740 ggcgctggat gagttccctc ctgggaccga ggacagcgcg cgcgcaggtc cgggatgccg 22800 ccgaccatat cgtccacage ttcgaggget cageceeteg getegegtte geecccaact 22860 ccgacgagga ggacaatgcc ggtggtgcag acgacagtga cgatgaggcc ggcgacccgg 22920 gcgtatcgga ttgatccccc aagcccccgc cattcttcag tttttcttc ttttccttct 22980 tctaaggcct tcgggcctct tttitgtata gatcaactta atctgtaatc aaaaatgaag 23040 aaatttitgt gicaatitca totigotgig igtalgagat gaggalgato igigacgigg 23100 tectitigeg tettagetig attaaggget egigeecagg teccagieet caaaaggegt 23160 gggtcggggc tagtgcctgg ggagatccac atgtcgagac tggccaggcc gggaacgtgg 23220 tgaccgaggg ttatgggtga cccgattgtg ggtttttgcc gattccccc cggagttcac 23280 cacgccccgg ggcacggctc ggttctgggc cccgtttggc gattttagcc gacccgagcc 23340 cccgagggca ggattgagca cgagtgacct atttcaagtc aagattcttc aaaaggaaaa 23400 aaaaacacag atacagcett taggaaattg aaactgettt tattgaaata etgaaataag 23460

agaaataaga atgtgcatgt gtggcagccc ccggccaacc ctgcacgccc gagggggtgc 23520 ggggttggcc cgagcccgaa acctgacacc cgacccccc cctcaggggt agaagcgacg 23580 aaggigiicg aigiiccacg ggiiaggcag cicaaigccg icgcccgigg ccagccgiai 23640 ggagcccggc cgggggacgc cgaccactcg atacggaccc tcccacattg gtgagagctt 23700 gctcaatcca gcacgcgttt ggacgcggcg taggacgagg tcgtcgacgc agagtgatcg 23760 ggcccggacg tgacgctgat ggtagcgccg caggctctgc tggtagcgcg cggctctgag 23820 ggccgcgcgt cgccttcgct cttccaagta gtcgaggtca tctctgcgaa gctgatcttg 23880 atcagecteg cagtacatgg tggcccgagg agaceteagg gtgagetegg atgggagaae 23940 cgcttccgcg ccgtagacga ggaagaaagg cgtttccccg gttgctcggc tiggtgtagt 24000 teggitigee cagageaceg etggeaacte etegateeat gaategeegt getietigag 24060 tatgttgaag gtcttggttt taaggccttt gaggatttct gaattggcgc gctccacttg 24120 gccattgctt ctggggtggg caggtgaggc gaagcagagc ttgatgccca tgtcttcgca 24180 gtagtcgccg aagagttcac tagtgaattg ggtgccatta tccgtaataa tacggttagg 24240 cactccaaac cgggccgtga tgcccttaat gaatttaagt gcggagtgct tatcgatctt 24300 gacgaccgga taagccicgg gccacttagt gaacttgtcg atcgcgacat acagatactc 24360 aaacccgccc ggggcccgcc taaacggtcc caggatatcg agcccccaga cagcaaatgg 24420 ccacgaaagt ggtatggtct gcagggcctg ggccggctga tggattigct tggcgtggaa 24480 tigacacget ctacategee ggaccaggie gaccgeatea tigagagetg teggeeaata 24540 gaaaccctgg cgaaaagctt taccaaccaa ggtgcgcgag gcggagtggg ctccgcattc 24600 gccttcatgg atatcggcaa gaagcacaac gccttgttcc cgaggaatgc acttcaggag 24660 gattccatta gccgcgccc gatagagggt cccttctacc agcacgtagc gtttggagat 24720 gcgatggacg cgttcactcc cttcgcggtc ctcgggtaaa gtcttatctg tgaggtatgc 24780 tiggatotog gcaatocaag caatoaatot aagggagotig ggagogotoc cotogggtoc 24840 cgaggcctgg acttcaacgg gcctcggggg ccggtcaggc gcgtccgtct cccctaaggg 24900 gtcgggtcgc gccgacggct gggcaagcct ttcttcaaag gcgcccggtg gggtctgggc 24960 tegegtggae gegageegtg agagttegte ggeaateatg ttatecegte tgggeacatg 25020 ccgaagetea atecegteaa aatggegete cataegeegt aettggegea egtaggegte 25080 catcigcggg tcagagcacc ggtactcctt acagactigg ttaacgacca gctgggagtc 25140 gcctaacacc aggaggcggc ggatccccag tccagctgcc actctgagtc cggcaaggag 25200

tccctcgtac tctgccatat tgttggtcgc tcgaaagtcg aggcggacca agtatctgag 25260 gacgiciceg cicggagagg icaacgigac ccccgcaccg gcgcccigaa gagacaggga 25320 gccgtcgaac tgcattaccc agtgggcggt gtgaggcagc tgcgaggggt ccgtgctggc 25380 ctcggggatt gagacgggct cgggagccgg ggtccactct gccacaaaat cggcgagagc 25440 ctggctcttg atagcgtggc gtggttcaaa gtgcaaatcg aactcagaaa gttcgattgc 25500 ccatticacc acceptecty taceptetey attatgeaag attigacega gggggtaaga 25560 cgtaaccaca gtgacccgat gcgcctggaa ataatggcgc agtttcctcg aggccatcag 25620 aatagcgtaa agcatctict gggcctgagg gtatcgggtt ttggcgtccc ggagggcctc 25680 actaacaaag tagacgggcc gctgcacctt tcggtggggc cgatcctctt cgctaggggc 25740 cgcatccctg gggcactctt cgtccaagca gcctcgcggg gcgcacttgt cttctgtgct 25800 gatgacctcg gggtcggagg ataacagggg cggccttccc acagtggctt tggggccgtc 25860 ctgggggtca ggggctcctg gcgtcgtcgg acaagcgggc aaagggccaa ctccggtcgt 25920 caggggcctt aggcctccgt tcggctcggg ggcctcttct ccctgctctt tcccgggtcg 25980 agtcagcaca gggttagcct cggggtcaaa gggcgatagg tgcggccttc ccacagtggc 26040 ctcagggcct tcctgggggt cgggggctcc tagcaccgtc tgacaagcgg gcagagggcc 26100 aactccggtc gtcgggggcc tcgggccacc gttcggctcg ggggcctctc ctccctgctc 26160 tctcccgggc caagtcggca cagggtgggg aagcgcgaaa tgagaattgt cctcatcgcg 26220 ctccacaacc aatgccgcac taactacttg cggggtcgcc gctaagtaga gtagcaaggg 26280 ctcgtctggc tccggggcga ccagaactgg gggagagctt agatacgcct tcaactgggt 26340 gagggcattt tcagcttcct tcgtccaggt aaacggtccg gagcgtttga gaagcttaaa 26400 taagggtaac geettetete eeageetega tatgaacega ettagggegg eeatgeaace 26460 ggtgacgtat tgcacatccc taagtttgct gggggggcgc atccgctcta tagcccgtat 26520 cttctcgggg ttggcctcaa tgccccgggc agagaccaag aacccgagaa gcttgcccgc 26580 aggtacaccg aacacacat tatcggggtt taattttatg cgggcggagc ggagactctc 26640 aaaagtttcc gctagatcta tgagtaacgt ttcctggttg cgcgtcttta caaccaagtc 26700 atcgacataa gcttcaatat tacgtcctaa ttggctaccc aaagaaattc gagtagtacg 26760 tigaaaagta ggaccigcai iciiiaaccc gaagggcaii gicgiaiaac aaiaggiicc 26820 tatgggggta atgaacgcag tttttcctc atcctcccta gccatgcgaa tctgatggta 26880 accagagiai gcaictagaa aacacaaaag gicgcacccc gcagiggagi cgacaaicig 26940

atctatgcga ggcagggggt aaggatcctt aggacatgcc ttgttaaggt cggtgtagtc 27000 gatgcacate egaagettge egitegeett gggaaegace acegggiteg etagceacie 27060 ggcggggttg acgctgccat catatttttc ggcgatggtg ggccggaacc ttgggggcca 27120 acggacattc cgaagactcg ccacaaaggc tctacagccg acaccaccaa ccgggggcac 27180 ggagggctga ttcccgcgtc cgtgttgagg tgacactctg gacgaggaag cgccctccgt 27240 tgcgtgggca gcacttcggt cattacgccg gcgctcgatg ctggtgcggg cgtccggccc 27300 cccacgcaga tctttctggg tcgaaggagt cgacgaagga gtggcggccg aatggcgaac 27360 agggggtgcc gctcgtcgtg ccctccgtct tgacgacgcg gagccggtgg tagcagcacc 27420 agaggeettg gtggcggagg accgeecace ageatetagg egetgeegta eegteatgae 27480 taatttggcc acgtcgtcca gccatcgttg ggctggagac tccgggtcag ggacgacagg 27540 cgggtgacgt aagagcgcgc ccgcagcttg gagcgcgccc tggggcgtgc tgccgtcgcc 27600 gtagacgagg aggcgacgct ccccatctcg ccgttcttct ccatcgcccg cgatcggtga 27660 agtcgcggat ctttcgaccc tctcgagcgc ctcccccgc ttaggacttt ggcgtggagg 27720 gagcggtgga gtacgagctc gacggcgtgg gttcggctcc ccgtcgtcgc cactcacact 27780 cggagagagg tcgtgcgcct ttgcttgctc ggccatcagg ctgaacagga aaagcttggc 27840 gcacacggaa gagtacgaga gctcagaaaa acacactg agtcccctac ctggcgcgcc 27900 agatgacgga gcgtggggct cctcaccggg agaccgcgca ggcccccctt tgccggttcg 27960 gccggggact cagggtgaaa ttctaagctc tctgtatgtg gaaggttcgc gaccgtcgaa 28020 agagcataag acacgggcga tgtatacagg ttcgggccgc tgagaagcgt aataccctac 28080 tcctgtgttt tggggggatc tgtgtatgaa ggagctacaa agtatgagcc agcctctccc 28140 tigitciggg ticcgaatci ggaaaagtcc agtccagtcc cccctctaa gigggcaagg 28200 tcctcctttt atatcttaag gggataccac atgcaccatc tccctccttt ctgtggggac 28260 tiaccctacc titicataaa tggacggaga titgtatagt tgccgtccga atgaccttct 28320 gataggacgg cccataccta cctccacttc cgccgaaagc aggtgcgacg tgggattatg 28380 gctgtctgct gacgacatga ccagtgtcag actggtcaca aattgctcat tcctgtccac 28440 cacgegicag titageaate tacatgitgg cecticitea cacaacatet tgeetgiaat 28500 ggttaggatg aagcctggca tatatctaac caggactaac gtgccatctc taggaggtaa 28560 cacgctagct ccagctgggg acgagcgcct agaagccctc gtcctgacgg gatggggcga 28620 ggcgtgcgtc agatcgcctg tcgccaccta acccgcgatc tgaccggtct gtgactggtc 28680

acagaccgga taaacgagtg cactgcactt cgttacatgc ggcgtgacac gctcagccaa 28740 accgcaataa atgtggttag gtgagccccg ctgtgctcac ctaacccata cacgcggagc 28800 aaaaacccac gaggggtcgg ggcgcctcgg ccctcggggc cgaggcgggt gcggtccgac 28860 cccctcgggg ggactaagag gagggcgaac acatcaccct cgggcccgac gtcccccgag 28920 ggtgccaggc cacgtgggcg attgtgtctg cctcaaacct ctagtcatga tactcctgat 28980 cccatgicat cgacaaggcc atccgaatgt attaaggagt aaaagttaca agaaaaaaca 29040 ccacaatgca ccaaggtgca tgaccacaca ccatacacta cccccaagca caaaccactg 29100 agggtgaagc ctagcaccaa acgaccgcca ctaagtgtga ccaaacgccg ctaggcctac 29160 ggcagcaaca catagatgag acttcgaaaa cgatgccacc aaggtggtca cgacatgtag 29220 gatgctgcca tcgtccatct aaaaagatgt ggttttcacc cagagaaact catcaagaag 29280 gggagagggt aacccttgac agcgccccaa ggaggttacg acgcccgaag gcgtagccgc 29340 tgccggtccg gtgaaccacc ggactaggct tccgcctagg accctatagc cttgatcgca 29400 gatcaccgtc caccactcag aaccaccaca cagacaaaag gtagcacgta gcttccaccg 29460 caccgcaccg acgccccttc gtcggccgac tccatcgaac caccatccct gagagctggc 29520 ccaggacccc tccgttccac cacccgccgg ccgccttgcc agttttggcc aaaggagaac 29580 ccgggactgg gtgacattgc ttcggcagcc tgagcttccc ccgctggcga gctgctgtct 29640 caatccaacc tagaaactcc ccgcaaaaga aggggatgag ctctaggaag ggcgagggtg 29700 ccgaccggca acgaggaaga caacccatcg actccagctc cctttgcact accatctggg 29760 cctgcgccaa tgccggatac gctgtcgctc cggctccggc gccacccacc tgcacccct 29820 ttgcctggtc tccgcgcccc tcctggctgc gtcgcgccgc ccagctggcc gctaagggca 29880 ccacgacggc cgcccggcta ccgaggcctg gccgcgccat gggacagctc gcgctggcac 29940 cagcgagcca cggccgtcgc gctgttgccg gcgccagcga gcacaaccgc cagctccaag 30000 ggccgagcat gccactgagc cgccgccgct gccgcccggg ccggctgcac gtcaccggcg 30060 cacacgaccg cacgccgcca cgctccgcct ccgcgcccga ggcagcccca tgccattgcc 30120 gcgcacctcg cccgcccgct gccgagccgc caccgcgcac cttgctgagc cgccaccgcc 30180 gtccctagcc gcctcgtgcc gccgccacgc cagatccagg cgcgggatgg ccggatccgg 30240 ccttgggggc gccggatccg ccgcctcccc acaccgccac ggcgtcacca cctccgaccg 30300 cagtgagggc ttcgtcgttt gccccatcct catcgcgtcg aggaggaaga cgccaagaaa 30360 aaagggcctc gccgctgcct tccttgctcg ctgccggctt cgccgccggc gagctccggc 30420

ggcggcgagg tgggggagaa gaagtgggga gigggcagct agggtttttt cgcccccaa 30480 gccgcccgtg cgagagcgac ggtggggggg gggggacttt ccaacctctt ccagtgttct 30540 agtictccac gitatgiaac icaattigii taaccataga aagtaagaaa cctaccagcg 30600 tgitaagcic iciticatic cctitctict tcctggtitt gcttccatca catgicaagt 30660 gaagggitci taactaccat tacicctaca catctaatti itticicaga tcittcgcag 30720 gtatatattg atgctacatt itatgatctt aagataatct ccttcacatt accctctgct 30780 gaaactttag ctigaaccgt catcttcacc acaatttgag cccaatttgc acagagcaca 30840 acgagcaata gcttgccctt acgttcatta tttagcatga actactacta actacccaag 30900 aatcaataca ccggtttaat aacgccattt tatcacgtta atatatgttt cattcaacac 30960 accggttttg gcacagttgc aaacttgcaa taaattcitt cctacttctc catcccataa 31020 tataacaaat tggtatgici cgtctggtac taagitgcta tattatgaga tggagggagc 31080 acticitite ticcaaaata taagaatata giatiggati agatattate tagaticaeg 31140 aattogatta ggttgtctag atttatagtt gtatgtaatg tataattogg taataggtta 31200 ttaccicicg ggatggaggg agtagtittg actititit ticitataaa tcgctttgat 31260 ttttatatta gtcaaatttt atcgagttta actaagttta tagaaaaaaa ttagcaacat 31320 ttaagcacca cactagitic attaaaiita gcaiggaata tattitgata atatatitgi 31380 tctgtgttaa aaatgctgct atattttct ataaacgtag tcaaatttaa ataagttaga 31440 ctaaaaaaaa tcaaaacgac ttataataig aaatggagga agtagtagac tataacaaat 31500 ttaaaccgtg citigatiit agagcaicac taataigita gcaataaici aiccciaaaa 31560 tttattttt ttcctaaact gaaaatagga agtggaaata ctcctccatc taagagagag 31620 cctaaattca ataaaaaact aaaaaactaa aggtggatcc ctctattaaa ctaccgcaaa 31680 aaatttatgt ittitticic ticcacgcgc gcagaacaga taictcgatc aagttagcat 31740 gtaaaattti taaagagata ccitatacga ctccttccgt atttccaaaa gcaaacggat 31800 ttaaaatctg actcaaataa agatctatat atccaattta catgacacat gtttcgccga 31860 attittatat taataataat taatatitti aaaattaaat tattagcaat tigtitggag 31920 gatttatcaa aacaggatgg acgttgttta taacagcgtc tagacctaga cgcgcttgca 31980 aactgcggcc accetttat cacacaaatt tttgacaatt tgacactttc caaaaattaa 32040 ttttataaat taaccgigac caaaacttat ttaaaaataa tcttttgtt gagcgcaaaa 32100 tegtataett cagegecaaa tageaeggeg eegaeeteee eetteeete eeetetatee 32160

tccactgctg ccgcccacct ctccgtatca gctgcgtcgc gttggtttcc gccggcgctg 32220 ccgcgccggc gctgttggcg cccttcgctc ggagggctcg acccaagggc gagggggccg 32340 cacggggggc agtggcgccg aggacgcacg ccacgtgttc gacgaattgc tccggcgtgg 32400 cagggggcgcc tcgatctacg gcttgaactg cgccctcgcc gacgtcgcgc gtcacagccc 32460 cgcggccgcc gtgtcccgct acaaccgcat ggcccgagcc ggcgccgacg aggtaactcc 32520 caactigige acctaeggea tieteategg tieetgeige tgegegggee getiggaeet 32580 cggtttcgcg gccttgggca atgtcattaa gaagggattt agagtggacg ccatcgcctt 32640 cactcctctg ctcaagggcc tctgtgctga caagaggacg agcgacgcaa tggacatagt 32700 gctccgcaga atgacccagc ttggctgcat accaaatgtc ttctcctaca atattcttct 32760 caaggggctg tgtgatgaga acagaagcca agaagctctc gagctgctcc aaatgatgcc 32820 tgatgatgga ggtgactgcc cacctgatgt ggtgtcgtat accactgtca tcaatggctt 32880 cttcaaggag ggggatctgg acaaagctta cggtacatac catgaaatgc tggaccgggg 32940 gattttacca aatgttgtta cctacagctc tattattgct gcgttatgca aggctcaagc 33000 tatggacaaa gccatggagg tacttaccag catggttaag aatggtgtca tgcctaattg 33060 caggacgtat aatagtatcg tgcatgggta ttgctcttca gggcagccga aagaggctat 33120 tggatttctc aaaaagatgc acagtgatgg tgtcgaacca gatgttgtta cttataactc 33180 gctcatggat tatctttgca agaacggaag atgcacggaa gctagaaaga tgttcgattc 33240 tatgaccaag aggggcctaa agcctgaaat tactacctat ggtaccctgc ttcaggggta 33300 tgctaccaaa ggagcccttg ttgagatgca tggtctcttg gatttgatgg tacgaaacgg 33360 tatccaccct aatcattatg ttttcagcat tctaatatgt gcatacgcta aacaagggaa 33420 agtagatcag gcaatgcttg tgttcagcaa aatgaggcag caaggattga atccggatac 33480 agtgacctat ggaacagtta taggcatact ttgcaagtca ggcagagtag aagatgctat 33540 gcgttatttt gagcagatga tcgatgaaag actaagccct ggcaacattg tttataactc 33600 cctaattcat agictcigta tcttigacaa atgggacaag gctaaagagt taattctiga 33660 aatgitggat cgaggcatci giciggacac tattitciit aattcaataa itgacagica 33720 ttgcaaagaa gggagggtta tagaatctga aaaactcttt gacctgatgg tacgtattgg 33780 tgtgaagccc gatatcatta cgtacagtac tctcatcgat ggatattgct tggcaggtaa 33840 gatggatgaa gcaacgaagt tacttgccag catggtctca gttggaatga aacctgattg 33900

tgttacatat aatactttga ttaatggcta ctgtaaaatt agcaggatgg aagatgcgtt 33960 agitettiti agggagaigg agageagigg igitagieet gatatiatia egiataatai 34020 aattetgeaa ggtttattte aaaccagaag aactgetget geaaaagaae tetatgtegg 34080 gattaccgaa agtggaacgc agcttgaact tagcacatac aacataatcc ttcatgggct 34140 ttgcaaaaac aatctcactg acgaggcact tcgaatgttt cagaacctat gtttgacgga 34200 tttacagctg gagactagga cttttaacat tatgattggt gcattgctta aagttggcag 34260 aaatgatgaa gccaaggatt tgtttgcagc tctctcggct aacggtttag tgccagatgt 34320 taggacctac agtttaatgg cagaaaatct tatagagcag gggttgctag aagaattgga 34380 tgatctattt ctttcaatgg aggagaatgg ctgtactgcc aactcccgca tgctaaattc 34440 cattgitagg aaactgitac agaggggiga tataaccagg gciggcacti accigitcat 34500 gattgatgag aagcactict ccctcgaagc atccactgct tccttgtttt tagatctttt 34560 gtctggggga aaatatcaag aatatcatag gtttctccct gaaaaatata agtcctttat 34620 agaatettig agetgetgaa geettigea gettigaaat teigigtigg agitettite 34680 tcctacagtt gtattagagg agggatctic icittatgtg taaatagcga ggtatgtatg 34740 tcacctctcc gaattatttt tactctggtt cctagacggt aaacaagcaa ttatgttctg 34800 ccttigatgc cagaaaaaac acaaaagttt gtcgttatct ctactaacgg atcataaagg 34860 aattigtaac tggagtitca aacitaatti gictaggcag tagiittggc attagatcca 34920 acatigigta ggaticatit gigigiatca atciataggg titcattaaa titcgitaat 34980 gtgtactgtt taggtgttga atagtttgac ttgtttttta actgaacaaa agatactgaa 35040 atcgttccat tcaacaaaca catgttccgt taatgaaatt attgtacgtt accttttgtt 35100 tictiacica caagigicci citiictiai aicciataga tiggiacaac aaattatiga 35160 ttcaattttg gttttgaaca ttgatgatcc tccctgcact attggtgcag ctgctcttct 35220 atteatiting igaagigate teagtacete teaateeeat eettateett eigigeatee 35280 ttcattccaa ttttttacgc atatcgattg ttttctttta tataacagtc cataaagata 35340 atcacatcat gacaaagtta tttatticta cagtatagtt atataagtat tcaccagttt 35400 tccatgaata ttttggcatg tgattacaaa gaagattatt tgagaaaatc catgctttta 35460 tttcatcttt ttgtttgaag ttgaacitta atttatggtg taaatttcag ttattattgc 35520 tagcagcicg tactcittaa iggiataact icaciigigo tiaticicca atatciccci 35580 tcttgttgtt caggttcaag aaaatcattt gttggattca gaatctggtg tccattttct 35640

tcttaaatta ttaaatcctc cagtgaatct tgttgattcc aaagcaccat cgataggttc 35700 caaacticit ggaatcagta aagttcaaat gcttaatgga tcaaataagg attctgactg 35760 catttcagag gaaatccttt caaaagttga agagattctc ttaagctgtc aagtgatcaa 35820 gtcgctcgac aaagatgaca agaaaacaac aaggccagaa ctgtgtccaa agtggcttgc 35880 tttgttgaca atggaaaatg catgcttgtc tgctgtttca gtagagggta agttttaatc 35940 aaatttcttg gtcatgattt ccctttatga ccattatatt tatttatatg agccaaataa 36000 gcagttgtca acttgtcata agttacatag cacctatttg caatattcat gggtggtttg 36060 cttagccctt ttcttcacct gcttttgatt gatgacttcc atctgtgttg cagaattgaa 36120 ttggagtagt ggactgcact agaagcacct atggccattg tcatactagg aaggttttcc 36180 cttatcaaat attigatigi tacagagact tctgacacag tgtccagagt tggaggaaat 36240 tttaaagaga cattaaggga gatgggaggt cttgatagta tttttgacgt tatggtggat 36300 tttcattcaa cattggaggt gagatctcgc taacatcgca tattttacat ttcctttgtt 36360 caactctaat ggattgtgca ggcttgttcc ttttcgccat tttagcttta atgtgcttga 36420 agccacatga aagtaatgct tgtccagata catagccaaa ggttgttata ttttggggca 36480 tggaaaatgc ttgaggtagt aactattttc atcaggacat ggaaaattgg ctgcaacaca 36540 aattatgttg tittatgttg caaaaatagt titttaatac titttattc tgcatgtggt 36600 gttagtatct tacagttcct ctgatgatta tatcccccac gataataaca cttgaaacga 36660 taataacact tgacatatct acaccaagtg aacattattc atttggatgt tacttttcca 36720 gctatacttg ctgttcttgc atgtgtaagc aagtttggag taaattgcgc attaatttaa 36780 atgcttggtg ttcctatctg tgtacttttt attccccaac taataatgca atcatattac 36840 gctgataaac tgaataaata aattaacaat atacttctgg tggcaaacct tgtgtatcag 36900 aatctcataa aggatacatc cacttcagct ttggaccgaa atgaaggaac atctttgcaa 36960 agtgctgctc tcctcttgaa atgtttgaaa atattggaaa atgccatatt tctaagcgat 37020 gataacaagg taatgctcct tatatgttct gtttcagttt agtacccatt tccttcttct 37080 gtactatett eteteetgat tigitetgig caaaatgige aaacagigeg actitigiaig 37140 tctgcttaac aattttcttt tcttcctgaa aaagcaatat gaactcttac attcattttg 37200 cttcttgcag acccatttgc ttaatatgag tagaaaattg aacccgaaac gctccttgct 37260 ttcttttgtt ggtgtcatta tcaatactat tgagttatta tcaggtattt ttcttaataa 37320 tacaatgigt tegetaacac aataaaatgi titaaacate cagtatgita aagtigcagi 37380

cigacgccta titigititg cigcagcici ticaatacti cagaaticii cigiigitic 37440 cagetetaca tateegaaat egietaaagt eteteaacag agttaetetg gtaataacaa 37500 acaccaattt tgittgatca gtigatctcg tiggcttttc tatgcactgt ctcaatatag 37560 tttggtcgcc attcaagtct cactacagat gttgaacttg gcctgacacc aaatatttat 37620 aaaatgctac ctgatatttt taatatttca tgtttcctga cccagattat cttgttggtt 37680 cctcgtataa gtttaattag tgacattctt gaagctttgt tatgcagcag atgtcatggg 37740 gggaactica titaaigaig gaaagagcaa gaacicgaaa aaaaaaaact iiigicgaac 37800 cagacacgtc attgttgctt atcttcaaaa tcagaagttt ctcatattac tatatcttct 37860 ggtagtgatg ctggtctgtc acagaaggca ttcaattgtt ctccatttat atcaagcaat 37920 ggggcatcaa gtggttcatt aggcgagagg cacagcaatg gtagtggttt gaagttgaat 37980 ataaaaaagg atcgtggcaa tgcaaatcca attagaggct caactggatg gatticaata 38040 agagegeaca gitetgatgg gaaeteeaga gaaatggeaa aaagaeteeg tetatettaa 38100 aatgtaatca ccgacagtgg tggtggtgat gacccttttg catttgaccg ccgcgtcggc 38160 gtcgccacca cgtaatcgcc cacgtcgctg ccccgctgc cacgtcgtcg accgcgcacg 38220 gtaatcacac gcatctcgag gccgccgcta gctgatatct tctcatccgg ttgatttgtg 38280 attttggcgt ttttgcagtg gtgatggcgg ggggcgaccg tggccgaggc gtggagtgcc 38340 atccgcatca gggtgtatcg gccgcgctgc tccgccctgg tccgcaggct ttggcggcga 38400 gctggcggcg gagggagact gtggtgagat cggatttcgc cgctggtggt gtcgctacca 38460 tgggggattc gccgcaggcg ctctcaggtt tgcagcctcc tccactctct tcccttttt 38520 atttttttt ctcgcaaaat gtgttgtgat gttcgtctcg ctgggcaggc ctcatagcca 38580 ttaatgtagt ttgctggaac atttacattt ggaacgttgt tggcaattgc ttgacaaaat 38640 gtggaattgt ggaggggaga aaaatcattt gaacctgcag tgacaaaatt gccatctcta 38700 attttaaaac tgaaggtgtg gaaatcaaac ataatcattg ccagcgcatc attcttgtta 38760 accaccatga tatatigtig gitataacag itagciccac accaaccitg aaggigicaa 38820 tagaatgitt agtataaatt gaggagaaca ggcagtigit aagactitci aaagaactig 38880 tagcagctaa tactagctat tgtgcatttg tgtttcatgg aatttgagca gcaatggata 38940 tttcttacta agatgtatga tgcaaaacaa aaaactatgt ctatacagtt tacatgtaat 39000 gtgcggatgc aaataaaatc atgtacatgg acaaactcat gggattcata ccgaattcca 39060 gaattgcatt tcttatgtgg ttacttttgt tgttgatttg gttaccagac atcgatgtga 39120

tticaagggi cagaggggit igciictacg cggiggcigc agtigcagca atcittiigi 39180 ttgtcgccat ggttgtggtt catccacttg tgctcctatt tgaccgatac cggaggagag 39240 ttcaggaaaa aaatttgaaa atacccattt tttgaaaaag atttacgttt atatacacta 39300 gtatgaagaa tttgcgaaaa tataactaat ccgcagatcg gttatgcggg agcgcaacaa 39360 aagtatggcg tggcggcgc gagtggacgg ccgaggcgtt cgcgcggaat ggggctgcgg 39420 gaccgagcca gtctcgcttg ccggtaacgc ggaaccggta cgctcccgca gcgccagtgt 39480 gcggaaccgc ggcgccaaca ttttttact gcatggcact gtgtttaata ctgtttgaca 39540 ctgtttctgg tactgtttta cacagttccc gggtcagttc cgcacaatgg aggcgcggca 39600 ccgaccatga acaatgtgtg aacagtgctg cacagggtta aaacagtgta taaactgcgc 39660 tgcacagtgc tggagtcgct ggccactgcg gttccgcgtt ttggaaccgc gggaccgtcg 39720 cgattccgcg tittggagct gccggaccat gacggttccg cgcaggatcg tcggtcccgt 39780 attitgaatc tgcggaaccg tcgctgtccc gcgtttccgt ttcgcgggat gcgtatattt 39840 ttataaaacc tctccatgca tgtatataaa cataaattat tgaaaaaata agtatatttg 39900 caaattttti tcgagagctc agcactacat tgcaaagatt tgggcaactc tgacaatttc 39960 catgitctac aagcitgacg icgagggaat ggagaaccig ccaccgaata giagcccigc 40020 tatctatgtt gcgaaccatc agagtttttt ggatatctat acccttctaa ctctaggaag 40080 gtgtttcaag tttataagca agacaagtat atttatgttc cgaattattt gatgggcaat 40140 gtatctctta ggagtaatic ctitgcggcg tatggacagc aggagccagc tggtatggct 40200 gtagtctcat ccctgctttc ttaagtagac atatatgcaa ttacagaatt tggtaaacaa 40260 acaagatttt atgaatcata tatgattttg gggaaaacac caaactctct ttggtggctg 40320 ccttgaacat agttctattc acacagttat agcaccttct ttaaaatgaa gaactttgtt 40380 gcatacacat atggccaaac cacataatga attttgttta tttctatctt tgaatgttag 40440 caccitatti tcatgcatat catgciaatt tgcttgccca cgttgagtgg gaatttitit 40500 ccatgitta taatitatat atgitctaga citctagicc acaatitatc tacitcaigi 40560 tcctgagcct ctagtatggc tggtagcaga ctaggtgctg agtgctgtcc atttttgcag 40620 actgaagaga ggagaaatac aggactgtcc gttgttagtc agatttgtaa aaatagactc 40680 tgatgtagti tattttagcc cctattttat atttaacaat acaaatatat aacgtatcct 40740 aagaacttat cgtaatttag gagaagttgc tcgtttcatt aaattaaact gtgaagtaaa 40800 aatgtgtgct cgagtctgtc aatgcaatcc tgtgttcttg tttgaagata tggtgtaggg 40860

caggctagga tcgaacactg aatggtaaga ctgcttctgc cttcatttgt gcacttggtg 40920 ctgccacgcc gattaagcag tagaacaaag taattttgtc gtgcacaaat gagttatatt 40980 tcattgaaaa tcgaagtgaa aatgaaccaa aagatagaag aaaaggggaa acttggtaat 41040 tatatacicc acaaattiat tggtaagatt tgatattaga cgctcgatta cttggcttaa 41100 gttaaggata tcaaatttgg ggaagcacca aaggaattat tgtgaaggag ttgtgggtgc 41160 ataacgitat ctactaggit caaatcciag igactaigaa tattaatgag taaggiaagg 41220 gatttattgt taattttagt ttctttaaga ttgtgtccgg gtacaccatt cggtaagtgt 41280 aataatgitt tgtattggat tcacitgtgt tacgtgcatg tgatttacct ittcatttgt 41340 ttctgcgttc tgggtatgaa tttgacgaga ttccátggtc agctcaacat atcagttact 41400 gcgtgtcaag cgatcttata tggtatgcgc acaagcgatt gtatacggat atgacagtat 41460 aacgtgtgat attgatacga tgttcctttc ctttataaag gaacaaagac ttttttaaaa 41520 aaaagaaggg gtattactaa aaaccaaaat gtcaaaaaca aaatatcagt gcacatggca 41580 agigtgcacg agcaatagci tgcccttacg ticattatti agcatgtact actactaact 41640 acgcaaaaat caattcaccg attattaaac tgttaacatc attttagcac gttaacatat 41700 gtttcattca acacacggt tttggcacat ttacaaactt gcaaagttgc aatactccct 41760 tcgttacata gcataagaga ttttaggtga atgtgacaca tctatccaaa ttcattatac 41820 tagaatgtat caccgcctcc acgccgggag ggagagcgcc gccggtggag aaagggggag 41880 ggagtggtcg aggggaacca gtagggtgcc ctccccgtcg ccgcctcccc gtggccgcgc 41940 cggcgagaca ggaggaagag ggggatatgg agcggcgccg ccggtgaggg cgcgcgcgc 42000 ggggggagcg gcgacgccgg tgaggaaggg aaggggagtg gtggctttga gagagatagg 42060 ggggaggaaa aatgatttta gagttagggt ttgggctgct gagtttttat atagatcggg 42120 atcaatcagg accgtccatc agatcggaca actacggctt ctcccgcgtt gggccgggtg 42180 ccactcctag gttgcccaca ctattgggcc acatgtacgc tccgcgtgaa ataagttcac 42240 tttaggtcct ttaagttgcc tctgaattgt tcccaggccg gccgcactat tgggccaccc 42300 cataggccat gtgtacgctc cgcacagaat aatticgctt tagctccctt aattigtccc 42360 ctcaaactcc taaaaccagt gcaaatcttt aatttttagt tcacccattg caactcacgg 42420 gcatatttgc tagtgacata taatatgaaa cgaaggatgt agcagactat agaatttaaa 42480 ctgtgctttc attitagagc atcactaact gitatttaga tttttattta aataaatgct 42540 gaaatgatgt tittattatg aaaattagca ataaagctcc caaaattica aaaaaaaatt 42600

aaaagagatt tattaatcat ggttaattta attaaaaatt aaatctaacc atatcatatt 42660 atttcacggt ccgtgatgag gaaatggcag ctgctatcac ttacggtggg agagaagggg 42720 cattgittat tittataaci atcicttata actcccatga aactataaaa taaatataat 42780 cattatcata acattagttt tttttccatt gcaacgcaag ggtaattttt cagtacaata 42840 aaaaaaataa aagigggcca tictgaacgg aaatttctgg tttttttcc caagagcgcc 42900 gcacacaact gcgcaagaga tcgatcgcga tcaccctgct cgtcgccgat ctcctacacc 42960 atccctgcca tctccttccc ctccactggc tgctgctgca cctgtcagct agggcgggca 43020 tggcgcgccg cgccgcttcc cgcgctgctg gcgcccttcg ctcggagggc tcgatccaag 43080 ggcgagggg ccgcgggg ggcagtggcg gtggcgcgga ggacgcacgc cacgtgttcg 43140 acgaattgct ccgtcgtggc ataccagatg tcttctccta caatattctt ctcaacgggc 43200 tgtgtgatga gaacagaagc caagaagctc tcgagttact gcacataatg gctgatgatg 43260 gaggtgactg cccacctgat gtggtgtcgt acagcaccgt catcaatggc ttcttcaagg 43320 agggggatet ggacaaaatg ettgaceaga ggatttegee aaatgttgtg acctacaact 43380 ctattattgc tgcgctatgc aaggctcaaa ctgtggacaa ggccatggag gtacttacca 43440 ccatggttaa gagtggtgtc atgcctgatt gcatgacata taatagtatt gtgcatgggt 43500 tttgctcttc agggcagccg aaagaggcta ttgtatttct caaaaagatg cgcagtgatg 43560 gtgtcgaacc agatgttgtt acttataact cgctcatgga ttatctttgc aagaacggaa 43620 gatgcacgga agcaagaaag attttigatt ctatgaccaa gaggggccta aagcctgata 43680 ttactaccta tggtaccctg cttcaggggt atgctaccaa aggagccctt gttgagatgc 43740 atggtctctt ggatttgatg gtacgaaacg gtatccaccc taatcattat gttttcagca 43800 ttctagtatg tgcatacgct aaacaagaga aagtagaaga ggcaatgctt gtattcagca 43860 aaatgaggca gcaaggattg aatccgaatg cagtgaccta tggaacagtt atagatgtac 43920 tttgcaagtc aggtagagta gaagatgcta tgctttattt tgagcagatg atcgatgaag 43980 gactaagacc tgacagcatt gittataact ccctaattca tagtctcigt atcittgaca 44040 aatgggagaa ggctgaagag ttatticttg aaatgttgga tcgaggcatc tgtcttagca 44100 ctattitctt taattcaata attgacagtc attgcaaaga agggagggtt atagaatctg 44160 gaaaactctt tgacttgatg gtacgaattg gtgtgaagcc cgatatcatt acccttggca 44220 ggtaagatgg atgaagcaat gaagttacit iciggcatgg icicagitgg gttgaaacci 44280 aatactgtta citatagcac titgattaat ggctactgca aaattagtag gatggaagac 44340

gcgttagttc tttttaagga gatggagagc agtggtgtta gtcctgatat tattacgtat 44400 aacataatto tgcaaggitt atticaaaco agaagaacig cigcigcaaa agaacictat 44460 gtcaggatta ccgaaagtgg aatgcagatt gaactttgtt agatttaatt ggataattaa 44520 tccatttaaa tcaattaaat caaataaatt ccaaggctca ttatgctagg aattcatgtg 44580 aattcattct tctatgggat atcaatggga tgaagagttt tgagaattaa tccatttgat 44640 taaggaattg gtaacttata tcaattaatc ctaattgatg gatggttgat ggttgtgtag 44700 tggaggatgg ttcatggcta gitgatgaca attagttgct ctattcctct tcctattcca 44760 ttggtaactt acatcaatta ctcttaattg attgttggtt gatggttgtg tagtggagga 44820 tggttcatgg ctagttgatg acaattagtt gctccattcc tcttcctatt ccatgactct 44880 tactcttcat cttccattcc tcttataaaa tgagaatgga tttgatctcc cgcgagaaga 44940 agaagacaca ctttcatcca ttttcaaaag ctgttgctgc tacggtaatc ccatcccgac 45000 gagtgtgtgc acacgcgttg ggagagtagg cctccgaaac cacgcgttgc tgcgacgttt 45060 gcacagacgg gcgggcgatc aggtttttgg ggagcgcaag gcgcgactac tcactgttcg 45120 tcaacatcta cttcatcttc accaacatgt cgaacactgg agacaaggag aaggagactc 45180 ccgtcaacac caacggaggc aatactgcct caaactccag cggaggacca ttcttggggt 45240 ataaccttat tacattattt caattagaag ttttactgtt aatgttcatc gcaatgtcaa 45300 cattgtgtca ttatgtgatt gttgatgctt attcaacgtt aagcatgctc atgttgatta 45360 cattcaccac tatcactgga tcaaatccta ttgtaaatat catgtttatt atcttgttat 45420 tttggattaa aatatgccga attatgacca aatttccaac aaacttagca catacaacat 45480 aateetteat ggaettigea aaaacaaact cactgaigat geactiegaa igitteagaa 45540 cctatgtttg atggatttga agcttgaggc taggactttc aacattatga ttgatgcatt 45600 gcttaaagtt ggcagaaatg atgaagccaa ggatttgttt gttgctttct cgtctaacgg 45660 tttagtgccg aattattgga cgtacagatt gatggctgaa aatattatag gacaggggtt 45720 gctagaagaa ttggatcaac tctttctttc aatggaggac aatggctgta ctgttgactc 45780 tggcatgcta aatttcattg ttagggaact gttgcagaga ggtgagataa ccagggctgg 45840 cacttacctt tccatgattg atgagaagca cttttccctc gaagcatcca ctgcttcctt 45900 gittatagat cittigicig ggggaaaata tcaagaatat catatatiic tcccigaaaa 45960 atacaagtcc tttatagaat ctttgagctg ctgaagcatt ttgcagcttt gaaattctgt 46020 gttggaattc ttttctccta cagtccgatt agaggaggga tcttctctgt atgtgtaaat 46080

agcgaggtat gtatgtcacc tctccgaatt attttgactg tggttcctgg actgtaaaca 46140 agctattatc ttctggtgtt gatgccagaa aaaacacaaa agtttgtcgt tatctctact 46200 aacggatcat aaaggggttt gtaactggag tttcaaactt aaggtatcta ggcagtaggt 46260 atatattgat cctacatctt atgatcttaa gatgatatcc ttctcattat cctctgctga 46320 aactttaget tgaaccgtca tetacaccac aatttgagee eettageaca gageacaacg 46380 agcaatagct tgcccttacg ttcattattt agcatgcact actactaact acccaataat 46440 caatacatcg gttattaaac tgtttgtaca gtttaataat gtcattttat cacgttaaca 46500 tatgtttcat tcaacaccac accggttttg gcacagttgc aaacttgcaa taacattttt 46560 actacttctc cgccccataa tataacaatc tcgttccata ctatattgct atattacggg 46620 acggatgaag tacticitic ciiccaaaat ataagaatci agicciagat tagatattai 46680 tiggaticae gaatiigati aggetateta gattigtagi egiatgiaat gietaatieg 46740 gtaataggtt attacctctt tggatggagg gagtagtttt tatttcgtac tccctctgtt 46800 tcatattata agtigittig actititict tagicaaatt ttatigagit igactaaati 46860 tatagaaaaa aaattagcaa catttaagca ccacattagt ttcattaaat gtagcatgga 46920 atatatttt ataatatgit tgittitta tiaaaatgci actatatti iciataaatg 46980 tagccaaatt taaagaagtt tgattacgaa aaaaaatcaa aatgacatat aatatgaaac 47040 tgaggatgta gcagactata gcaaatttaa actatgcttt tattttagag catcaccaaa 47100 agagatagee taaatettat ettaaetaat taaaatatte ataatttiee titegteaca 47160 ttaaattttc gtccgtaaat ccgattgaaa tccaactaga caatccaaaa aatagagaaa 47220 aagaacagaa aaaataataa aaagcacaca aatcttatct caatcccgcg ggaagctgcc 47280 gatgccgccg aatccgctcg agcgccgccg ccgccgctca cggggaacga tgtcgctgct 47340 atcgcacgtg gtatgggagg gcgccgccgc cgctgcttgg gagataggat atggagagag 47400 aaggaaatgt gagggaggt taggttittc cccattcgta tcttcagcga cacggaggcg 47460 atccaagetg tecateagat cagaeggete agaaegeete eatetteagg eegegeatge 47520 ttgatgggcc gagggaaggc cggagggtcg aacaaacgta gtcagaggag gagttggagg 47580 aggiaaagia gaattiatti gcgggcigag atagiaaatg gactgaaaat ggcccataga 47640 gaaattggga attitattta aataaatgtt gaaaaggtgt tiatattatc aaaattagaa 47700 attaagetee gaaaatttta aaaaatatte aaagageatt attaateatg attaatttaa 47760 taaaaattaa atccaaccat atcatattat ttcacggcgc gcagtaggaa aatgcgcagc 47820

tgttgtcgct tacggtggga gagaagggac attgtttatt ttcagaacta tcttttataa 47880 ctcccatgga actttaaaat aaatataatc attattatag cattagtttt tttctgtctt 47940 ttttttcccc aagagcgccg cgcagaagag atcgatcgcg atctccctgc cccgacgtcg 48000 ccggccgatc tctcattctc tccacgccct gctcgtcgcc gatctcctac accatccctg 48060 ccatctcctc cttccctcc cctctatcct ccactggtgc cgcccacctc tccgtataag 48120 acaaactgcg ttgcggcgtt ggtttccgcc ggcgctgctg ctgcacctgt cagctagggc 48180 gggcatggcg cgccgcgccg cttcccgcgc tgttggcgcc cttcgctcgg acggctcgat 48240 ccaagggcga ggaggccgcg cggggggcag tggcgccgag gacgcacgcc acgtgttcga 48300 cgaattgctc cggcgtggca ggggcgcctc gatctacggc ttgaaccgcg ccctcgccga 48360 cgtcgcgct cacagccccg cggccgccgt gtcccgctac aaccgcatgg cccgagctgg 48420 cgccgacgag gtaactcccg acttgtgcac ctacggcatt ctcatcggtt gctgctgccg 48480 cgcgggccgc ttggacctcg gtttcgcggc cttgggcaat gtcattaaga agggatttag 48540 agtggaagcc atcaccttca ctcctctgct caagggcctc tgtgccgaca agaggacgag 48600 cgacgcaatg gacatagtgc tccgcagaat gaccgagctc ggttgcatac caaatgtctt 48660 ctcctacaat aatcttctca acgggctgtg tgatgagaac agaagccaag aagctctcga 48720 gttgctgcac atgatggctg atgatcgagg aggaggtagc ccacctgatg tggtgtcgta 48780 taccactgtc atcaatggct tcttcaaaga gggggattca gacaaagctt acagtacata 48840 ccatgaaatg ctggaccggg ggattttacc tgatgttgtg acctacagct ctattattgc 48900 tgcgttatgc aagggtcaag ctatggacaa gccatggagg tacttaccac gatggttaag 48960 aatggtgtca tgcctgattg catgacatat aatagttatt tcttgaaatg ttggatcgag 49020 gcatttgtct ggacactatt ttctttaatt caataattga cagtcattgc aaagaaggga 49080 gggttataga atctgaaaaa ctctttgacc tgatggtacg tattggtgtg aagcctgata 49140 tcattacata cagtacactc atcgatggat attgcttggc aggtaagatg gatgaagcaa 49200 tgaagttact ttctggcatg gtctcagttg ggttgaaacc taatactgtt acttatagca 49260. ctttgattaa tggctactgc aaaattagta ggatggaaga cgcgttagtt ctttttaagg 49320 agatggagag cagtggtgtt agtcctgata ttattacgta taacataatt ctgcaaggtt 49380 tatttcaaac cagaagaact gctgctgcaa aagaactcta tgtcaggatt accgaaagtg 49440 gaacgcagat tgaacttagc acatacaaca taatccttca tggactttgc aaaaacaaac 49500 tcactgatga tgcacttcag atgittcaga acctatgitt gatggattig aagcttgagg 49560

ctaggacitt caacaitaig atigaigcai igcitaaagi iggcagaaai gaigaagcca 49620 aggattigtt tgttgctttc tcgtctaacg gtttagtgcc gaattattgg acgtacaggt 49680 tgatggctga aaataitata ggacaggggt tgctagaaga attggatcaa ctctttcttt 49740 caatggagga caatggctgt actgttgact ctggcatgct aaatttcatt gttagggaac 49800 tgttgcagag aggtgagata accagggctg gcacttacct ttccatgatt gatgagaagc 49860 actiticcci cgaagcatcc actgcttcci tgtttataga tcttttgtct gggggaaaat 49920 atcaagaata ttataggtit cicccigaaa aatacaagic cittatagaa tcittgagci 49980 gctgaagcat titgcagcti tgaaattctg tgttggaatt citttctcct acagtcctat 50040 tagaggaggg atcitcictg tatgigtaaa tagcgaggta tgtatgccac cictccgaat 50100 tatttttact giggitccta gacigiaaac aagcaattat gitatgcigt igatgccaga 50160 aaaaacataa aagtttgtcg ttatctctac taacggatca taaagggatt tgtgactgga 50220 gtttcaaact taatgtgtct aggcagtaat tttgacatta gatccaaaac aatttatagg 50280 gtttcattaa atttcatcta tgtgtactgt ttaggtgttg aatagtttga cttgttttt 50340 aactgaacaa aagatatgtc tgaagctttg ttctttacca aatgcagtac tgatcatcac 50400 aatatatttt ttatggaaca agattggatt gtatagaatg gtttccgatc tgattatctt 50460 atctcaacgt attattatgc acatgtacta atcatgaaat atctgatgga atgatgtttc 50520 tatttacctg tgtgaggcag caaggagtga gatggataac accacatact ccctctatcc 50580 cagaatataa gaagtittag agtiggacac gattattaag aaagtaggta gaagtgagta 50640 gtggagggtt gtgattgcat gagtagtgga ggtaggtggg aaaagtgaat ggtggagggt 50700 tgtgattggt tgggaagaga atgttggtag agaagttgtt atattttggg gagtacatta 50760 ttattctaga acaatactgt tgtgctcaag aagcgttcca aagatgtttc acaacctgtg 50820 ctcgatgggt tttgagctta atcctgggac attcagtatc atgatctgtc tcattcttaa 50880 acatggaata aaggatgaca gcatgatttc tttgtctcta taatcttttg gctacccaca 50940 gataataget gtaaatetat aetaetttaa aaggagtagt ggtggtggtg agtggtgaat 51000 ctgccaccac cccaccacca actctcaaaa ttctgacatg tgggatcact gtcaatccct 51060 tctccaagac atgtgggatc actgtcaatc ccttctccaa accaattgta tgatagaaca 51120 gtggaaatca cggacagacc atggagctct caaccataat catccttgcg agttaataac 51180 aaatggagcg taaacttggc aagcaaaaaa ctcaaattaa ttctaaaatt aagctctagg 51240 attcaaaata gatttcctct ctgcattgtg ctgttatgat ttttaattcc gtaacaacgc 51300

aaatgcattt tgctagtctt ataaagaagg gttaatgcaa atattctgat taaatgattg 51360 tatctatgaa gtttgaatgc tagtggaagc tcctttgacc atgttttgtt gtgcgagcat 51420 ttaagagagt gaagagaatg cttctttggt gctgttctgg tatggaagga tccacagata 51480 aaattcaggt tctactgctt ctctgcttgt aattttcatg aagctgcagt gaataccttg 51540 ttgaccactt gatctgttgc tttgaaggag aatatagtag tggccaaggt tggtgacggt 51600 gatggtggca tgtgatcccc cagatcttca gtgacccaga gaggagggga cggcgcgtgg 51660 tgagctacaa ggcatactca gtggagggca agatcaaggc ctcccgtccg taggggactc 51720 cgctgcatca aggccaactg ctccgaactg atcaatttct ggtacggatc acttctcctt 51780 tccttttttt tttcacctta agcactctct tgattcttcg ctgctacctc ccttaatttc 51840 tttcaatata ttgtggcact tgatcatggc ggagacccac cttccagtgt gaatggattt 51900 tgtcaaagaa ctaaatttat tccattagct tattttctga ttacatggaa gacattcttt 51960 tctggaataa atacagaact aaatcctgtt tcctgaataa aagttgttag tgtgtggcat 52020 ggtgcatttc cgcgcttcta aattttataa aacctgttca ttcaatttga acctgcatcc 52080 aatccaatat tttaggtgca gacaggtgct tgcggtcagg ttaaagaagt tggcaaaaat 52,140 gcttctgaag aaaggttaat tgttgttica tctcaggagg taatatgcag atgattattc 52200 caattggcat tgccttgcca tttttatcac gagtctttac aattttatat cctcctacat 52260 attettteea gatteeagat gateeagtgt eteeaacaat tgaggegett attttgetee 52320 atagtaaagc aagtacactt gctgagaacc accagttgac aacacggctt gttgtaccat 52380 caaacaaagt tggttgtatt cttggggaag gtggaaaggt aattactgaa atgagaagac 52440 ggactggggc tgaaatccga gtctactcaa aagcagataa acctaagtac ctgtcttttg 52500 atgaggaget tgtgcaggta atttatttgg ccatacetae accagagate catatattae 52560 ttttataact gcagttttta ctigitaaca tticatigig ctittacati igitccaagc 52620 tttcaggttg ctgggcttcc agctattgaa agaggagccc tgacagagat tgcttcgagg 52680 ctttgaacta ggacactcag agatggaagt tcttccaata atccgacacc ttttgcccct 52740 gttgatggtc ctcctgttga tatcttgcct aacaaggaat tcatgctata tggacgatct 52800 gctaatagtc ccccatatgg agggcctgct aatgatccac catatggaag acctgccatt 52860 gatccaccat atggaagacc aatatccaca atatggaaga cctgccaatg atccaccata 52920 tagaagacct gtcaatgata catcatattg agggttggac aatgatgggc ctcgtgatca 52980 ggcccggtcc tgagggggt cgaatggggc gatcgctccg ggcccccgat tcccagggcc 53040

cccacctatc tgtgcaacga gtagtagcga tcttccagcg cgcaacgtga ggcgatgttt 53100 ctccgtgatt tcgccggcct gcaactgcga gatcgcgagt ataacgatca gccgatcgat 53160 ctcatctgcc gactgccatg ctgatgccac acgcaagcgc agcatatcag ccttatcttg 53220 gtigatcggc atgctggacg agcacatctg tigtcgcatc aactgctgac tgctatatat 53280 gtgctggtgc tgaatcgatc gattgtcgtc gcggaagtga agaacaacca cggcactgct 53340 gcctgctggg ctctagccgc catcagtaag tacgctatac tgcctatcta gatctagatc 53400 gagattacat agiggaatta icigittata acaaaattac aaggiatcaa tigataatti 53460 aaggttataa ccgtacaaac ticagtgatt tgctggtttc acattggtta gatttgtttc 53520 aactaatttg gtacttctgt agccttgtaa tttacgaatc tagtattaat attttcttaa 53580 gtattagcct gttccttgat attatgctgt tgagaaagta tgcaatagat aacaaaaaca 53640 agtaggtgtg tigaggatgc tcaagagtaa tacagccact tcaataattc tgatattatc 53700 aggacatcat caataattct gcgcctacaa atcttcaaag aaaattttaa tataatgcgt 53760 atgattitti aaatacgaat attgattgct atttaaagat atttatatta tatggtaatt 53820 attatttgaa ggtttataat aaaggcctcc gtttttagtt tcacgctggg ccttcagaat 53880 ctcaggaccg gccctgctca tgatc 53905

```
<210> 29
<211> 24
<212> DNA
<213> artificial sequence
<220>
<223> Oligonucleotide primer for amplification
<400> 29
```

<210> 30 <211> 24 <212> DNA <213> artificial sequence

atcaggagee ticaaattgg gaac

24

```
<220>
<223>
       Oligonucleotide primer for amplification
<400>
        30
ctcgcaaatt gcttaattit gacc
<210>
        31
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification
<223>
<400>
       31
tgaaggagtt atgggtgcgt gacg
                                24
<210>
       32
<211>
       24
<212>
      DNA
<213>
       artificial sequence.
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       32
tigccgagca cactigccat gigc
                                24
<210>
       33
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223> Oligonucleotide primer for amplification
```

```
<400> 33
gcgacgcaat ggacatagtg ctcc
                              24
<210> 34
<211> 24
<212> DNA
<213> artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       34
ttacctgcca agcaatatcc atcg
                              24
<210>
       35
<211> 24
<212> DNA
<213>
      artificial sequence
<220>
<223> Oligonucleotide primer for amplification
<400>
       35
aaggcatact cagtggaggg caag
                              24
<210>
       36
<211> 24
<212>
      DNA
<213>
       artificial sequence
<220>
<223> Oligonucleotide primer for amplification
<400> 36
ttaacctgac cgcaagcacc tgtc
                              24
```

```
<210>
        37
 <211>
        24
 <212>
       DNA
 <213>
        artificial sequence
<220>
 <223>
       Oligonucleotide primer for amplification .
<400>
        37
 tggatggact atgtggggtc agtc
                               24
<210>
        38
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       38
agtggaagtg gagagagtag ggag
                               24
<210>
       39
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       39
ccctccaaca cataaatggt tgag
                               24
<210>
       40
```

```
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       40
ttictgccag gaaactgtta gatg
                              24
<210>
       41
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       41
gcgatcttat acgcatacta tgcg
                              24
<210>
       42
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       42
aaagtettig ticcticacc aagg
                              24
<210> 43
<211> 26
<212>
       DNA
```

```
<213> artificial sequence
 <220>
<223> Oligonucleotide primer for amplification
<400> 43
gaggatttat caaaacagga tggacg 26
<210> 44
<211>
       24
<212> DNA
<213> artificial sequence
<220>
<223> Oligonucleotide primer for amplification
<400> 44
tgggcggcag cagtggagga taga
                              24
<210> 45
<211> 24
<212> DNA
<213>
      artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       45
aagaagggag ggttatagaa tctg
                              24
<210>
       46
<211> 24
<212>
      DNA
<213>
      artificial sequence
<220>
```

```
Oligonucleotide primer for amplification
<223>
<400> 46
atatcaggac taacaccact gctc
                              24
<210> 47
<211> 24
<212> DNA
<213> artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400> 47
acgagtagta gcgatcttcc agcg
                              24
<210> 48
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400> 48
cagcgtgaaa ctaaaaacgg aggc
                              24
<210>
       49
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       49
```

)

<400>

52

gcccaaactc aaaaggagag aacc

24

```
<210>
      53
<211>
      24
<212>
      DNA
<213>
      artificial sequence
<220>
      Oligonucleotide primer for amplification
<223>
<400> 53
cctcaagtct cccctaaagc cact 24
<210>
      54
<211>
      24
<212> DNA
<213> artificial sequence
<220>
<223>
      Oligonucleotide primer for amplification
<400> 54
gctctactgc tgataaaccg tgag
                              24
<210>
       5 5
<211> 24
<212> DNA
<213> artificial sequence
<220>
<223>
      Oligonucleotide primer for amplification
<400> 55
tggatggact atgtggggtc agtc
                              24
<210>
       56
<211> 24
```

```
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification
\langle 223 \rangle
<400>
       56
agtggaagtg gagagagtag ggag
                              24
<210>
       57
<211>
       24
<212> DNA
<213> artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       57
tacgacgcca tttcactcca ttgc
                              24
<210>
       58
<211> 24
<212> DNA
<213> artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       58
catticicia igggcgtigc icig
                              24
<210>
       59
<211>
       26
<212>
       DNA
<213>
       artificial sequence
```

```
<220>
       Oligonucleotide primer for amplification
<223>
<400>
       59
accigiaggi aiggeaecti caacac
                                26
<210>
       60
<211>
       26
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification
<223>
<400>
       60
ccaaggaacg aagttcaaat gtatgg
                                  26
<210>
       61
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
       Oligonucleotide primer for amplification
<223>
<400>
       61
tgatgtgttt gggcatccct ttcg
                                24
<210>
       62.
<211>
       24
<212>
       DNA
<213>
        artificial sequence
<220>
       Oligonucleotide primer for amplification
<223>
```

```
<400>
       62
                               24
gagatagggg acgacagaca cgac
<210>
       63
<211>
       26
<212>
       DNA
<213> artificial sequence
<220>
       Oligonucleotide primer for amplification
<223>
<400>
       63
tcctatggct gtttagaaac tgcaca
                                 26
<210>
       64
<211>
       24
<212> DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       64
caagttcaaa cataactggc gttg
                              24
<210>
       65
<211>
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
       65
<400>
cacigicate taagigigat giga
                              24
```

```
<210>
       66
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       66
caagcgtgtg ataaaatgtg acgc
                               24
<210>
       67
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       67
tgcctactgc cattactatg tgac
                               24
<210>
       68
<211> 24
<212> DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       68
acatactacc gtaaatggtc tctg
                               24
<210>
       69
```

<211> 4820

<212> DNA

<213> rice

<400> 69

atcgatcgcg atctccctgc cccgacgtcg ccggccgatc tctcattctc tccacgccct 60 gctcgtcgcc gatctcctac accatccctg ccatctcctc cttcccctcc cctctatcct 120 ccactggtgc cgcccacctc tccgtataag acaaactgcg ttgcggcgtt ggtttccgcc 180 tgttggcgcc cttcgctcgg acggctcgat ccaagggcga ggaggccgcg cggggggcag 300 tggcgccgag gacgcacgcc acgtgttcga cgaattgctc cgccgtggca ggggcgcctc 360 gatctacggc ttgaaccgcg ccctcgccga cgtcgcgcgt gacagccccg cggccgccgt 420 gtcccgctac aaccgcatgg cccgagccgg cgccgacgag gtaactcccg acttgtgcac 480 ctacggcatt ctcatcggtt gctgctgccg cgcgggccgc ttggacctcg gtttcgcggc 540 cttgggcaat gtcattaaga agggatttag agtggacgcc atcgccttca ctcctctgct 600 caagggcctc tgtgccgaca agaggacgag cgacgcaatg gacatagtgc tccgcagaat 660 gaccgagete ggetgeatae caaatgtett etectacaat attettetea aggggetgtg 720 tgatgagaac agaagccaag aagctctcga gctgctgcac atgatggctg atgatcgagg 780 aggaggtagc ccaccigatg tggtgtcgta taccactgtc atcaatggct tcttcaaaga 840 gggggattca gacaaagctt acagtacata ccatgaaatg ctggaccggg ggattttacc 900 tgatgttgtg acctacaact ctattattgc tgcgttatgc aaggctcaag ctatggacaa 960 agccatggag gtacttaaca ccatggttaa gaatggtgtc atgcctgatt gcatgacata 1020 taatagtatt ctgcatggat attgctcttc agggcagccg aaagaggcta ttggatttct 1080 caaaaagatg cgcagtgatg gtgtcgaacc agatgttgtt acttatagct tgctcatgga 1140 ttatctttgc aagaacggaa gatgcatgga agctagaaag attttcgatt ctatgaccaa 1200 gaggggccta aagcctgaaa ttactaccta tggtaccctg cttcaggggt atgctaccaa 1260 aggagecett gttgagatge atggtetett ggatttgatg gtacgaaacg gtatecacee 1320 tgatcattat gttttcagca ttctaatatg tgcatacgct aaacaaggga aagtagatca 1380 ggcaatgett gtgttcagca aaatgaggca gcaaggattg aateegaatg cagtgaegta 1440

tggagcagtt ataggcatac tttgcaagtc aggcagagta gaagatgcta tgctttattt 1500 tgagcagatg atcgatgaag gactaagccc tggcaacatt gtttataact ccctaattca 1560 tggtttgtgc acctgtaaca aatgggagag ggctgaagag ttaattcttg aaatgttgga 1620 tegaggeate tgtetgaaca etattitett taatteaata attgacagte attgeaaaga 1680 agggagggtt atagaatcig aaaaactcit igagcigatg glacgtatig gigtgaagcc 1740 caatgtcatt acctacaata ctcttatcaa tggatattgc ttggcaggta agatggatga 1800 agcaatgaag ttactticig gcatggictc agtigggitg aaacctaata cigitactia 1860 tagcactitg attaatggct actgcaaaat tagtaggatg gaagacgcgt tagttctttt 1920 taaggagatg gagagcagig gigitagice igatattati acgiataaca taaticigca 1980 aggittatit caaaccagaa gaacigcigc igcaaaagaa ciciaigita ggattaccga 2040 aagtggaacg cagattgaac ttagcacata caacataatc cttcatggac tttgcaaaaa 2100 caaactcact gatgatgcac ttcagatgtt tcagaaccta tgtttgatgg atttgaagct 2160 tgaggctagg actitcaaca itatgatiga tgcatigcit aaagtiggca gaaatgatga 2220 agccaaggat tigitigitg citicicgic taacggitta gigccgaatt atiggacgia 2280 caggitgatg gctgaaaata ttataggaca ggggttgcta gaagaattgg atcaactctt 2340 tettteaatg gaggacaatg getgtaetgt tgaetetgge atgetaaatt teattgttag 2400 ggaactgttg cagagaggtg agataaccag ggctggcact tacctttcca tgattgatga 2460 gaagcacttt tcccicgaag catccactgc ttccttgttt atagatcttt tgtctggggg 2520 aaaatatcaa gaatattata ggttictccc tgaaaaatac aagtccttta tagaatcttt 2580 gagctgctga agcattttgc agctttgaaa ttctgtgttg gaattctttt ctcctacagt 2640 cctattagag gagggatctt ctctgtatgt gtaaatagcg agtttgaatg ctagtggaag 2700 ctcctttgac catgttttgt tgtgcgagca tttaagagag tgaagagaat gcttctttgg 2760 tgctgttctg gtatggaagg atccacagat aaaattcagt agtggccaag gttggtgacg 2820 gtgatggtgg catgtgatcc cccagatctt cagtgaccca gagaggaggg gacggcgcgt 2880 ggtgagctac aaggcatact cagtggaggg caagatcaag gcctcccgtc cgtaggggac 2940 tccgctgcat caaggccaac tgctccgaac tgatcaattt ctggtgcaga caggtgcttg 3000 cggtcaggit aaagaagitg gcaaaaaigc tictgaagaa aggitaaitg itgiticaic 3060 tcaggagatt ccagatgatc cagtgtctcc aacaattgag gcgcttattt tgctccatag 3120 taaagtaagt acactigcig agaaccacca giigacaaca cggciigiig taccatcaaa 3180

caaagtiggt tgiaticitg gggaaggigg aaaggiaatt acigaaaiga gaagacggac 3240 tggggctgaa atccgagtct actcaaaagc agataaacct aagtacctgt cttttgatga 3300 ggagctigtg caggitgctg ggcttccagc tattgaaaga ggagccctga cagagattgc 3360 ttcgaggctt tgaactagga cactcagaga tggaagttct tccaataatc cgacaccttt 3420 tgcccctgtt gatggtcctc ctgttgatat cttgcctaac aaggaattca tgctatatgg 3480 acgatcigct aatagicccc cataiggagg gccigctaat gatccaccat aiggaagacc 3540 tgccattgat ccaccatatg gaagaccaat atccacaata tggaagacct gccaatgatc 3600 caccatatag aagaccigic aaigatacai catatigagg giigaacaai gaigggccic 3660 gtgatcaggc ccggtcctga ggggggtcga atggggcgat cgctccgggc cccccgattc 3720 ccagggcccc cacctatctg tgcaacgagt agtagcgatc ttccagcgcg caacgtgagg 3780 cgatgitict ccgtgatitc gccggcctgc aactgcgaga tcgcgagtat aacgatcagc 3840 cgatcgatct catctgccga ctgccatgct gatgccacac gcaagcgcag catatcagcc 3900 ttatctiggt tgatcggcat gctggacgag cacatctgtt gtcgcatcaa ctgctgactg 3960 ctatatatgt gctggtgctg aatcgatcga ttgtcgtcac ggaagtgaag aacaaccacg 4020 gcactgctgc ctgctgggct ctagccgcca tcagctgcgg agctgatcca tggacgtgag 4080 gattaccgaa gactgtcagg tctcactggg tatccaggtg gctctgtcga attgtggatt 4140 ccaaatagtt aactggagtc tgtcattggt gttggtggtg tcaatctagc tgagatccgt 4200 ctggtatagc gtaagagaaa catcatgcac tatccccagt cataaccatg ccccaatggc 4260 caccaatagt titcctcgtg aaaatctccc cttgatccca gatctctggt gcgagagtga 4320 agtigcacga agcccatcct ggticticcg agtccattgt ggagatccag ggcattccgg 4380 atcaagtgaa agccgcacag agccttctgc aaggcttcat cggcgcaagc agcaacagca 4440 ggcaggcgcc ccagtcctct cgcatggccc attattttta gtaagctgga ggacattcgc 4500 aacagggggg tcagtggtca ctgcaaagct gagtttgttc ttcagttcaa ctgcagaaaa 4560 ttgcagatcg gttgccgtag ttgctagaac ggtacatagt tgccacctaa ctgtagcgag 4620 tggcataact tattgigtgt tactgcccaa tgttgtctct ccttgtgttc atggattcag 4680 actigigati giagiattic iggaicagac iggagiaaaa gaaaaaaaaa aaggaagaca 4740 tgggtttaac agtaagctca aaacgttgac agtagtaaaa taaaaggggt ttgttcactt 4800 taaaaaaaaa aaaaaaaaaa 4820

<210> 70 <211> 4821 <212> DNA <213> rice <400> 70 cgatcgcgat ctccctgccc cgacgtcgcc ggccgatctc tcattctctc cacgccctgc 60 tegtegeega tetectacae catecetgee atetectect tecectecee tetatectee 120 actggtgccg cccacctctc cgtataagac aaactgcgtt gcggcgttgg tttccgccgg 180 cgctgctgct gcacctgtca gctagggcgg gcatggcgcg ccgcgccgct tcccgcgctg 240 ttggcgccct tcgctcggac ggctcgatcc aagggcgagg aggccgcgcg gggggcagtg 300 gcgccgagga cgcacgccac gtgttcgacg aattgctccg ccgtggcagg ggcgcctcga 360 tctacggctt gaaccgcgcc ctcgccgacg tcgcgcgtga cagccccgcg gccgccgtgt 420 cccgctacaa ccgcatggcc cgagccggcg ccgacgaggt aactcccgac ttgtgcacct 480 acggcattct catcggttgc tgctgccgcg cgggccgctt ggacctcggt ttcgcggcct 540 tgggcaatgt cattaagaag ggatttagag tggacgccat cgccttcact cctctgctca 600 agggcctctg tgccgacaag aggacgagcg acgcaatgga catagtgctc cgcagaatga 660 ccgagctcgg ctgcatacca aatgtcttct cctacaatat tcttctcaag gggctgtgtg 720 atgagaacag aagccaagaa gctctcgagc tgctgcacat gatggctgat gatcgaggag 780 gaggtagccc acctgatgtg gtgtcgtata ccactgtcat caatggcttc ttcaaagagg 840 gggattcaga caaagcttac agtacatacc atgaaatgct ggaccggggg attttacctg 900 atgitgigae etacaaciei atiatigeig egitaigeaa ggeteaagei aiggaeaaag 960 ccatggaggt acttaacacc atggttaaga atggtgtcat gcctgattgc atgacatata 1020 atagtattct gcatggatat tgctcttcag ggcagccgaa agaggctatt ggatttctca 1080 aaaagatgcg cagtgatggt gtcgaaccag atgttgttac ttatagcttg ctcatggatt 1140 atctttgcaa gaacggaaga tgcatggaag ctagaaagat tttcgattct atgaccaaga 1200 ggggcctaaa gcctgaaatt actacctatg gtaccctgct tcaggggtat gctaccaaag 1260 gagcccttgt tgagatgcat ggtctcttgg atttgatggt acgaaacggt atccaccctg 1320 atcattatgt tttcagcatt ctaatatgtg catacgctaa acaagggaaa gtagatcagg 1380

caaigciigi giicagcaaa aigaggcagc aaggatigaa iccgaaigca gigacgiaig 1440

gagcagttat aggcatactt igcaagtcag gcagagtaga agatgctatg ctttattitg 1500 agcagatgat cgatgaagga ctaagccctg gcaacattgt ttataactcc ctaattcatg 1560 gtttgtgcac ctgtaacaaa tgggagaggg ctgaagagtt aattcttgaa atgttggatc 1620 gaggcatctg tctgaacact attitcttta attcaataat tgacagtcat tgcaaagaag 1680 ggagggttai agaatctgaa aaactctttg agctgatggt acgtattggt gtgaagccca 1740 atgicatiac ciacaataci citatcaatg gatatigcii ggcaggtaag atggatgaag 1800 caatgaagtt actitctggc atggtctcag ttgggttgaa acctaatact gttacttata 1860 gcactttgat taatggctac tgcaaaatta gtaggatgga agacgcgtta gttcttttta 1920 aggagatgga gagcagtggt gttagtcctg atattattac gtataacata attctgcaag 1980 gtttatttca aaccagaaga actgctgctg caaaagaact ctatgttagg attaccgaaa 2040 giggaacgca gaiigaacii agcacataca acataaicci tcaiggacii igcaaaaaca 2100 aactcactga tgatgcactt cagatgtttc agaacctatg tttgatggat ttgaagcttg 2160 aggctaggac titcaacatt atgattgatg cattgcttaa agttggcaga aatgatgaag 2220 ccaaggattt gittgitgct itcicgicia acggittagi gccgaattat iggacgiaca 2280 ggttgatggc tgaaaatatt ataggacagg ggttgctaga agaattggat caactctttc 2340 tttcaatgga ggacaatggc igtactgtig actctggcat gctaaatttc attgttaggg 2400 aactgttgca gagaggtgag ataaccaggg ctggcactta cctttccatg attgatgaga 2460 agcactitic ccicgaagca iccacigcii cciigittai agatciitig icigggggaa 2520 aatatcaaga atattatagg tttctccctg aaaaatacaa gtcctttata gaatctttga 2580 gctgctgaag cattttgcag ctttgaaatt ctgtgttgga attcttttct cctacagtcc 2640 tattagagga gggatcttct ctgtatgtgt aaatagcgag tttgaatgct agtggaagct 2700 cctttgacca tgttttgttg tgcgagcatt taagagagtg aagagaatgc ttctttggtg 2760 ctgttctggt atggaaggat ccacagataa aattcagtag tggccaaggt tggtgacggt 2820 gatggtggca tgtgatcccc cagatcttca gtgacccaga gaggagggga cggcgcgtgg 2880 tgagctacaa ggcatactca gtggagggca agatcaaggc ctcccgtccg taggggactc 2940 cgctgcatca aggccaactg ctccgaactg atcaatttct ggtgcagaca ggtgcttgcg 3000 gtcaggttaa agaagttggc aaaaatgctt ctgaagaaag gttaattgtt gtttcatctc 3060 aggagatice agaigateea gigiciceaa caattgagge gettattitg etecatagia 3120 aagtaagtac actigcigag aaccaccagt igacaacacg gcitgiigta ccatcaaaca 3180

aagiiggiig taticiiggg gaaggiggaa aggiaattac igaaaigaga agacggacig 3240 gggctgaaat ccgagtctac tcaaaagcag ataaacctaa gtacctgtct tttgatgagg 3300 agcttgtgca ggttgctggg cttccagcta ttgaaagagg agccctgaca gagattgctt 3360 cgaggctitg aactaggaca cicagagatg gaagtictic caataatccg acacctttig 3420 cccctgttga tggtcctcct gttgatatct tgcctaacaa ggaattcatg ctatatggac 3480 gatctgctaa tagtccccca tatggagggc ctgctaatga tccaccatat ggaagacctg 3540 ccattgatcc accatatgga agaccaatat ccacaatatg gaagacctgc caatgatcca 3600 ccatatagaa gacctgtcaa tgatacatca tattgagggt tgaacaatga tgggcctcgt 3660 gatcaggccc ggtcctgagg ggggtcgaat ggggcgatcg ctccgggccc cccgattccc 3720 agggccccca cctatctgtg caacgagtag tagcgatctt ccagcgcgca acgtgaggcg 3780 atgiticice gigatitege eggeetgeaa etgegagate gegagiataa egateageeg 3840 atcgatctca tctgccgact gccatgctga tgccacacgc aagcgcagca tatcagcctt 3900 atcttggttg atcggcatgc tggacgagca catctgttgt cgcatcaact gctgactgct 3960 atatatgtgc tggtgctgaa tcgatcgatt gtcgtcacgg aagtgaagaa caaccacggc 4020 actgctgcct gctgggctct agccgccatc agctgcggag ctgatccatg gacgtgagga 4080 ttaccgaaga ctgtcaggtc tcactgggta tccaggtggc tctgtcgaat tgtggattcc 4140 aaatagttaa ctggagtctg tcattggtgt tggtggtgtc aatctagctg agatccgtct 4200 ggtatagcgt aagagaaaca tcatgcacta tccccagtca taaccatgcc ccaatggcca 4260 ccaatagitt tccicgigaa aaicicccci igaicccaga tciciggigc gagagigaag 4320 ttgcacgaag cccatcctgg ttcttccgag tccattgtgg agatccaggg cattccggat 4380 caagtgaaag ccgcacagag ccttctgcaa ggcttcatcg gcgcaagcag caacagcagg 4440 caggcgcccc agiccicicg catggcccat tattitiagt aagctggagg acattcgcaa 4500 caggggggtc agtggtcact gcaaagctga gtttgttctt cagttcaact gcagaaaatt 4560 gcagatcggt tgccgtagtt gctagaacgg tacatagttg ccacctaact gtagcgagtg 4620 gcataactta tigigigita cigcccaatg tigicicicc tigigitcat ggaticagac 4680 tigigatigi agtatitcig gaicagacig gagtaaaaga aaaaaaaaaa ggaagacaig 4740 ggtttaacag taagctcaaa acgttgacag tagtaaaata aaaggggttt gttcacttta 4800 aaaaaaaaa aaaaaaaaaa a 4821

<210> 71
<211> 5005
<212> DNA
<213> rice

71

<400>

gagatcgatc gcgatctccc igccccgacg tcgccggccg atctctcatt ctctccacgc 60 cctgctcgtc gccgatctcc tacaccatcc ctgccatctc ctccttcccc tcccctctat 120 cctccactgg tgccgcccac ctctccgtat aagacaaact gcgttgcggc gttggtttcc 180 gccggcgctg ctgctgcacc tgtcagctag ggcgggcatg gcgcgccgcg ccgcttcccg 240 cgctgttggc gcccttcgct cggacggctc gatccaaggg cgaggaggcc gcgcgggggg 300 cagtggcgcc gaggacgcac gccacgtgtt cgacgaattg ctccgccgtg gcaggggcgc 360 ctcgatctac ggcttgaacc gcgccctcgc cgacgtcgcg cgtgacagcc ccgcggccgc 420 cgtgtcccgc tacaaccgca tggcccgagc cggcgccgac gaggtaactc ccgacttgtg 480 cacctacggc atteteateg gttgctgctg ccgcgcgggc cgcttggacc tcggtttcgc 540 ggccttgggc aatgtcatta agaagggatt tagagtggac gccatcgcct tcactcctct 600 gctcaagggc ctctgtgccg acaagaggac gagcgacgca atggacatag tgctccgcag 660 aatgaccgag ctcggctgca taccaaatgt cttctcctac aatattcttc tcaaggggct 720 gtgtgatgag aacagaagcc aagaagctct cgagctgctg cacatgatgg ctgatgatcg 780 aggaggaggt agcccacctg atgtggtgtc gtataccact gtcatcaatg gcttcttcaa 840 agagggggat tcagacaaag cttacagtac ataccatgaa atgctggacc gggggatttt 900 accigatgit gigacciaca acictatiai igcigcgita igcaaggcic aagciaigga 960 caaagccatg gaggtactta acaccatggt taagaatggt gtcatgcctg attgcatgac 1020 atataatagt attotgoatg gatattgoto ttoagggoag cogaaagagg ctattggatt 1080 tctcaaaaag atgcgcagtg atggtgtcga accagatgtt gttacttata gcttgctcat 1140 ggattatett igeaagaaeg gaagaigeai ggaageiaga aagaiiiteg aiteiaigae 1200 caagaggggc ctaaagcctg aaattactac ctatggtacc ctgcttcagg ggtatgctac 1260 caaaggagcc cttgttgaga tgcatggtct cttggatttg atggtacgaa acggtatcca 1320 ccctgatcat tatgttttca gcatictaat atgtgcatac gctaaacaag ggaaagtaga 1380 tcaggcaatg cttgtgttca gcaaaatgag gcagcaagga ttgaatccga atgcagtgac 1440

gtaiggagca gttaiaggca tactitgcaa gtcaggcaga gtagaagaig ciatgcitta 1500 ttttgagcag atgatcgatg aaggactaag ccctggcaac attgtttata actccctaat 1560 tcatggtttg tgcacctgta acaaatggga gagggctgaa gagttaattc ttgaaatgit 1620 ggatcgaggc atctgtctga acactatttt ctttaattca ataattgaca gtcattgcaa 1680 agaagggagg gttatagaat ctgaaaaact ctttgagctg atggtacgta ttggtgtgaa 1740 gcccaatgtc attacctaca atactcttat caatggatat tgcttggcag gtaagatgga 1800 tgaagcaatg aagitactit ctggcatggt ctcagttggg ttgaaaccta atactgttac 1860 ttatagcact ttgattaatg gctactgcaa aattagtagg atggaagacg cgttagttct 1920 ttttaaggag atggagagca gtggtgttag tcctgatatt attacgtata acataattct 1980 gcaaggitta titcaaacca gaagaacigc igcigcaaaa gaacictaig tiaggattac 2040 cgaaagtgga acgcagattg aacttagcac atacaacata atccttcatg gactttgcaa 2100 aaacaaactc actgatgatg cacticagat gittcagaac ctatgiitga iggatiigaa 2160 gcttgaggct aggactttca acattatgat tgatgcattg cttaaagttg gcagaaatga 2220 tgaagccaag gattigtitg tigciticic gictaacggt tiagigccga attatiggac 2280 gtacaggttg atggctgaaa atattatagg acaggggttg ctagaagaat tggatcaact 2340 ctitctitca atggaggaca atggctgtac tgttgactct ggcatgctaa atttcattgt 2400 tagggaactg ttgcagagag gtgagataac cagggctggc acttaccttt ccatgattga 2460 tgagaagcac ttttccctcg aagcatccac tgcttccttg tttatagatc ttttgtctgg 2520 gggaaaatat caagaatatt ataggtttct ccctgaaaaa tacaagtcct ttatagaatc 2580 tttgagctgc tgaagcattt tgcagctttg aaattctgtg ttggaattct tttctcctac 2640 agtcctatta gaggagggat cttctctgta tgtgtaaata gcgagtttga atgctagtgg 2700 aagctccttt gaccatgitt igitgigcga gcatttaaga gagtgaagag aaigctictt 2760 tggtgctgtt ctggtatgga aggatccaca gataaaattc aggagaatat agtagtggcc 2820 aaggitggig acggigatgg iggcaigiga icccccagai ciicagigac ccagagagga 2880 ggggacggcg cgtggtgagc tacaaggcat actcagtgga gggcaagatc aaggcctccc 2940 gtccgtaggg gactccgctg catcaaggcc aactgctccg aactgatcaa tttctggtgc 3000 agacaggigo tigoggicag gitaaagaag tiggcaaaaa tgottotgaa gaaaggitaa 3060 tigitgitic atcicaggag attocagaig atccagigic tocaacaatt gaggogotta 3120 ttttgctcca tagtaaagta agtacacttg ctgagaacca ccagttgaca acacggcttg 3180

tigiaccaic aaacaaagii ggiigiaiic tiggggaagg iggaaaggia attacigaaa 3240 tgagaagacg gactggggct gaaatccgag tctactcaaa agcagataaa cctaagtacc 3300 tgtcttttga tgaggagctt gtgcaggttg ctgggcttcc agctattgaa agaggagccc 3360 tgacagagat tgcttcgagg ctttgaacta ggacactcag agatggaagt tcttccaata 3420 atccgacacc ttttgcccct gttgatggtc ctcctgttga tatcttgcct aacaaggaat 3480 tcatgctata tggacgatct gctaatagtc ccccatatgg agggcctgct aatgatccac 3540 catatggaag acctgccatt gatccaccat atggaagacc aatatccaca atatggaaga 3600 ccigccaatg atccaccata tagaagacct gicaatgata catcatattg agggttgaac 3660 aatgatgggc ctcgtgatca ggcccggtcc tgaggggggt cgaatggggc gatcgctccg 3720 ggccccccga ttcccagggc ccccacctat ctgtgcaacg agtagtagcg atcttccagc 3780 gcgcaacgig aggcgaigit iciccgigat ticgccggcc igcaacigcg agaicgcgag 3840 tataacgatc agccgatcga tctcatctgc cgactgccat gctgatgcca cacgcaagcg 3900 cagcatatca gccttatctt ggttgatcgg catgctggac gagcacatct gttgtcgcat 3960 caactgciga cigcitatata igigciggig cigaatcgai cgatigicgi cacggaagig 4020 aagaacaacc acggcactgc tgcctgctgg gctctagccg ccatcagctg cggagctgat 4080 ccatggacgt gaggattacc gaagactgtc aggtctcact gggtatccag gtggctctgt 4140 cgaatigigg attccaaata gitaacigga gicigicati ggigitggig gigicaatci 4200 agcigagate egiciggiat agegiaagag aaacateatg cactateece agteataace 4260 atgececaat ggecaceaat agitticete gigaaaatet eeeetigate eeagatetet 4320 ggtgcgagag tgaagttgca cgaagcccat cctggttctt ccgagtccat tgtggagatc 4380 cagggcattc cggatcaagt gaaagccgca cagagccttc tgcaaggctt catcggcgca 4440 agcagcaaca gcaggcaggc gccccagtcc tctcgcatgg cccattattt ttagtaagct 4500 ggaggacatt cgcaacaggg gggtcagtgg tcactgcaaa gctgagtttg ttcttcagtt 4560 caactgcaga aaattgcaga tcggttgccg tagttgctag aacggtacat agttgccacc 4620 taactgtagc gagtggcata acttattgtg tgttactgcc caatgttgtc tctccttgtg 4680 ticaiggait cagaciigig aiigiagiai ticiggaica gaciggagia aaagaaaaaa 4740 aaaaaggaag acatgggttt aacagtaagc tcaaaacgtt gacagtagta aaataaaagg 4800 ggtttgttca ctitatttcc aaiatcaacc ttaccaacat ttggcgttga atcatttata 4860 ccacatcgct tgtgcagctg aatttggggc tgtttaaaag atggtctctt ggattgctaa 4920

ttgcctcgcg gcaagcgtgg taccttgtac aatataaata taattataac tatttaattt 4980 cataaaaaaa aaaaaaaaa aaaaaa 5005

<210> 72

<211> 4978

<212> DNA

<213> rice

<400> 72

gcgatctccc tgccccgacg tcgccggccg atctctcatt ctctccacgc cctgctcgtc 60 gccgatctcc tacaccatcc ctgccatctc ctccttcccc tcccctctat cctccactgg 120 tgccgcccac ctctccgtat aagacaaact gcgttgcggc gttggtttcc gccggcgctg 180 ctgctgcacc tgtcagctag ggcgggcatg gcgcgccgcg ccgcttcccg cgctgttggc 240 gcccttcgct cggacggctc gatccaaggg cgaggaggcc gcgcgggggg cagtggcgcc 300 gaggacgcac gccacgigti cgacgaattg ctccgccgig gcaggggcgc ctcgatctac 360 ggcttgaacc gcgccctcgc cgacgtcgcg cgtgacagcc ccgcggccgc cgtgtcccgc 420 tacaaccgca tggcccgagc cggcgccgac gaggtaactc ccgacttgtg cacctacggc 480 attctcatcg gttgctgctg ccgcgcgggc cgcttggacc tcggtttcgc ggccttgggc 540 aatgtcatta agaagggatt tagagtggac gccatcgcct tcactcctct gctcaagggc 600 ctctgtgccg acaagaggac gagcgacgca atggacatag tgctccgcag aatgaccgag 660 ctcggctgca taccaaatgt cttctcctac aatattcttc tcaaggggct gtgtgatgag 720 aacagaagcc aagaagctct cgagctgctg cacatgatgg ctgatgatcg aggaggaggt 780 agcccacctg atgtggtgtc gtataccact gtcatcaatg gcttcttcaa agagggggat 840 tcagacaaag cttacagtac ataccatgaa atgctggacc gggggatttt acctgatgtt 900 gtgacctaca actctattat tgctgcgtta tgcaaggctc aagctatgga caaagccatg.960 gaggtactta acaccatggt taagaatggt gtcatgcctg attgcatgac atataatagt 1020 attctgcatg gatattgctc ttcagggcag ccgaaagagg ctattggatt tctcaaaaag 1080 atgcgcagtg atggtgtcga accagatgtt gttacttata gcttgctcat ggattatctt 1140 tgcaagaacg gaagatgcat ggaagctaga aagattttcg attctatgac caagagggc 1200 ctaaagccig aaattaciac ciaiggiacc cigciicagg ggiaigciac caaaggagcc 1260

ctigitgaga igcatggici ciiggatiig aiggiacgaa acggiaicca cccigaicai 1320 tatgttttca gcattctaat atgtgcatac gctaaacaag ggaaagtaga tcaggcaatg 1380 ctigigitca gcaaaaigag gcagcaagga tigaatccga aigcagigac giaiggagca 1440 gttataggca tactttgcaa gtcaggcaga gtagaagatg ctatgcttta ttttgagcag 1500 atgatcgatg aaggactaag ccctggcaac attgtttata actccctaat tcatggtttg 1560 tgcaccigia acaaaiggga gagggcigaa gagitaatic tigaaaigii ggatcgaggc 1620 atctgtctga acactatttt ctttaattca ataattgaca gtcattgcaa agaagggagg 1680 gttatagaat cigaaaaact citigagcig aiggtacgia tiggigigaa gcccaaigic 1740 attacctaca atactcttat caatggatat tgcttggcag gtaagatgga tgaagcaatg 1800 aagttacttt ciggcaiggi cicagiiggg tigaaaccta atacigttac italagcaci 1860 ttgattaatg gctactgcaa aattagtagg atggaagacg cgttagttct ttttaaggag 1920 atggagagca gtggtgttag tcctgatatt attacgtata acataattct gcaaggttta 1980 tttcaaacca gaagaactgc tgctgcaaaa gaactctatg ttaggattac cgaaagtgga 2040 acgcagattg aacttagcac atacaacata atccttcatg gactttgcaa aaacaaactc 2100 actgatgatg cacttcagat gtttcagaac ctatgtttga tggatttgaa gcttgaggct 2160 aggactitca acattatgat igatgcattg citaaagttg gcagaaatga tgaagccaag 2220 gattigitig tigetticie gictaaeggi tiagigeega attatiggae giacaggiig 2280 atggctgaaa atattatagg acaggggttg ctagaagaat tggatcaact ctttctttca 2340 atggaggaca atggctgtac igttgactct ggcatgctaa atttcattgt tagggaactg 2400 ttgcagagag gtgagataac cagggctggc acttaccttt ccatgattga tgagaagcac 2460 ttttccctcg aagcatccac igcttccttg tttatagatc ttttgtctgg gggaaaatat 2520 caagaatatt ataggttict ccctgaaaaa tacaagtcct ttatagaatc tttgagctgc 2580 tgaagcattt tgcagctttg aaattctgtg ttggaattct tttctcctac agtcctatta 2640 gaggaggat cticicigia igigiaaata gcgagtiiga aigciagigg aagcicciii 2700 gaccatgitt igitgigcga gcatttaaga gagtgaagag aatgcttctt iggigcigti 2760 ctggtatgga aggatccaca gataaaattc aggttctact gcttctctgc ttgtaatttt 2820 catgaagcig cagigaatac ciigitgacc actigatcig tigciitgaa ggagaatata 2880 gtagtggcca aggttggtga cggtgatggt ggcatgtgat cccccagatc ttcagtgacc 2940 cagagagag gggacggcgc gtggtgagct acaaggcata ctcagtggag ggcaagatca 3000

aggecteecg teegtagggg acteegetge ateaaggeea actgeteega actgateaat 3060 ttctggtgca gacaggtgct tgcggtcagg ttaaagaagt tggcaaaaat gcttctgaag 3120 aaaggitaat tgitgiitca icicaggaga ticcagaiga tccagtgici ccaacaatig 3180 aggogottat titigotocat agiaaagiaa giacaciigo igagaaccao cagiigacaa 3240 cacggcttgt tgtaccatca aacaaagttg gttgtattct tggggaaggt ggaaaggtaa 3300 ttactgaaat gagaagacgg actggggctg aaatccgagt ctactcaaaa gcagataaac 3360 ctaagtacct gtcttttgat gaggagcttg tgcaggttgc tgggcttcca gctattgaaa 3420 gaggagccct gacagagatt gcttcgaggc tttgaactag gacactcaga gatggaagtt 3480 cticcaataa teegacaeet titgeeeetg tigatggtee teetgtigat atettgeeta 3540 acaaggaatt catgctatat ggacgatctg ctaatagtcc cccatatgga gggcctgcta 3600 atgatccacc atatggaaga cctgccattg atccaccata tggaagacca atatccacaa 3660 tatggaagac ctgccaatga tccaccatat agaagacctg tcaatgatac atcatattga 3720 gggttgaaca atgatgggcc tcgtgatcag gcccggtcct gaggggggtc gaatggggcg 3780 atcgctccgg gccccccgat tcccagggcc cccacctatc tgtgcaacga gtagtagcga 3840 tcttccagcg cgcaacgtga ggcgatgttt ctccgtgatt tcgccggcct gcaactgcga 3900 gatcgcgagt ataacgatca gccgatcgat ctcatctgcc gactgccatg ctgatgccac 3960 acgcaagege ageatateag cettatettg gitgategge atgetggaeg ageacatetg 4020 tigicgcate aacigcigae igcialatat gigciggige igaaicgate galigicgie 4080 acggaagtga agaacaacca cggcactgct gcctgctggg ctctagccgc catcagtaag 4140 ctgcggagct gatccatgga cgtgaggatt accgaagact gtcaggtctc actgggtatc 4200 caggtggctc tgtcgaattg tggattccaa atagttaact ggagtctgtc attggtgttg 4260 gtggtgtcaa tctagctgag atccgtctgg tatagcgtaa gagaaacatc atgcactatc 4320 cccagicata accaigccc aaiggccacc aaiagititc cicgigaaaa icicccciig 4380 atcccagate tetggtgega gagtgaagtt geaegaagee cateetggtt etteegagte 4440 catigiggag atccagggca ticcggatca agigaaagcc gcacagagcc ticigcaagg 4500 cttcatcggc gcaagcagca acagcaggca ggcgccccag tcctctcgca tggcccatta 4560 tttttagtaa gctggaggac attcgcaaca ggggggtcag tggtcactgc aaagctgagt 4620 tigitatica giicaaciga agaaaatiga agataggiig aagiiga tagaaaggia 4680 catagitgcc acctaactgt agcgagitgc ataacttati gigigitaci gcccaaigit 4740

<210> 73

<211> 4722

<212> DNA

<213> rice

<400> 73

cgccgatctc ctacaccatc cctgccatct cctccttccc ctccctcta tcctccactg 60 gtgccgccca cctctccgta taagacaaac tgcgttgcgg cgttggtttc cgccggcgct 120 gctgctgcac ctgtcagcta gggcgggcat ggcgcgccgc gccgcttccc gcgctgttgg 180 cgcccttcgc tcggacggct cgatccaagg gcgaggaggc cgcgggggg gcagtggcgc 240 cgaggacgca cgccacgtgt tcgacgaatt gctccgccgt ggcaggggcg cctcgatcta 300 · cggcttgaac cgcgcctcg ccgacgtcgc gcgtgacagc cccgcggccg ccgtgtcccg 360 ctacaaccgc atggcccgag ccggcgccga cgaggtaact cccgacttgt gcacctacgg 420 catteteate ggttgctgct geegegggg eegettggae eteggttteg eggeettggg 480 caatgtcatt aagaagggat ttagagtgga cgccatcgcc ttcactcctc tgctcaaggg 540 cctctgtgcc gacaagagga cgagcgacgc aatggacata gtgctccgca gaatgaccga 600 gctcggctgc ataccaaatg tcttctccta caatattctt ctcaaggggc tgtgtgatga 660 gaacagaagc caagaagctc tcgagctgct gcacatgatg gctgatgatc gaggaggagg 720 tagcccacct gatgtggtgt cgtataccac tgtcatcaat ggcttcttca aagaggggga 780 ttcagacaaa gcttacagta cataccatga aatgctggac cgggggattt tacctgatgt 840 tgtgacctac aactctatta ttgctgcgtt atgcaaggct caagctatgg acaaagccat 900 ggaggtactt aacaccatgg ttaagaatgg tgtcatgcct gattgcatga catataatag 960 tattctgcat ggatattgct cttcagggca gccgaaagag gctattggat ttctcaaaaa 1020 gatgcgcagt gatggtgtcg aaccagatgt tgttacttat agcttgctca tggattatct 1080 ttgcaagaac ggaagatgca tggaagctag aaagatttic gattctatga ccaagagggg 1140

cctaaagcct gaaattacta cctatggtac cctgcttcag gggtatgcta ccaaaggagc 1200 cctigttgag atgcatggtc tcttggattt gatggtacga aacggtatcc accctgatca 1260 ttatgttttc agcattctaa tatgtgcata cgctaaacaa gggaaagtag atcaggcaat 1320 gcttgtgttc agcaaaatga ggcagcaagg attgaatccg aatgcagtga cgtatggagc 1380 agitataggc atactttgca agtcaggcag agtagaagat gctatgcttt attttgagca 1440 gatgatcgat gaaggactaa gccctggcaa cattgtttat aactccctaa ttcatggttt 1500 gtgcacctgt aacaaatggg agagggctga agagttaatt cttgaaatgt tggatcgagg 1560 catcigicig aacactatti tettiaatte aataatigae agicatigea aagaagggag 1620 ggttatagaa tctgaaaaac tctttgagct gatggtacgt attggtgtga agcccaatgt 1680 cattacctac aatactctta tcaatggata tigcitggca ggtaagatgg atgaagcaat 1740 gaagttactt tetggeatgg teteagttgg gttgaaacet aataetgtta ettatageae 1800 tttgattaat ggctactgca aaattagtag gatggaagac gcgttagttc tttttaagga 1860 gatggagagc agtggtgtta gtcctgatat tattacgtat aacataattc tgcaaggttt 1920 atticaaacc agaagaacig cigcigcaaa agaaciciai giiaggatta ccgaaagigg 1980 aacgcagatt gaacttagca catacaacat aatccttcat ggactttgca aaaacaaact 2040 cactgatgat gcacticaga igiticagaa cciatgiitg aiggatiiga agciigaggc 2100 taggactitc aacattatga ttgatgcatt gcttaaagtt ggcagaaatg atgaagccaa 2160 ggattigiti gitgcitici cgiciaacgg titagigccg aattatigga cgiacaggit 2220 gatggctgaa aatattatag gacaggggtt gctagaagaa ttggatcaac tctttctttc 2280 aatggaggac aatggctgta ctgttgactc tggcatgcta aatttcattg ttagggaact 2340 gttgcagaga ggtgagataa ccagggctgg cacttacctt tccatgattg atgagaagca 2400 ctittccctc gaagcatcca ctgcttcctt gittatagat citttgtctg ggggaaaata 2460 tcaagaatat tataggttic tccctgaaaa atacaagtcc tttatagaat ctttgagctg 2520 ctgaagcatt ttgcagctit gaaattctgt gttggaattc ttttctccta cagtcctatt 2580 agaggagga icticicigi aigigiaaai agcgagtiig aatgciagig gaagciccii 2640 tgaccatgtt ttgttgtgcg agcatttaag agagtgaaga gaatgcttct ttggtgctgt 2700 tctggtatgg aaggatccac agataaaatt caggttctac tgcttctctg cttgtaattt 2760 tcatgaagct gcagtgaata ccttgttgac cacttgatct gttgctttga aggagaatat 2820 agtagiggcc aaggiiggig acggigaigg iggcaigiga icccccagai ciicagigac 2880

ccagagagga ggggacggcg cgtggtgagc tacaaggcat actcagtgga gggcaagatc 2940 aaggcctccc gtccgtaggg gactccgctg catcaaggcc aactgctccg aactgatcaa 3000 ttictggtgc agacaggtgc itgcggtcag gttaaagaag ttggcaaaaa tgcttctgaa 3060 gaaaggitaa tigitgiiic aictcaggag attccagaig atccagtgic tccaacaatt 3120 gaggcgctta ttttgctcca tagtaaagtg gaaaggtaat tactgaaatg agaagacgga 3180 ctggggctga aatccgagtc tactcaaaag cagataaacc taagtacctg tcttttgatg 3240 aggagettgt geaggttget gggetteeag etattgaaag aggageeetg acagagattg 3300 cttcgaggct ttgaactagg acactcagag atggaagttc ttccaataat ccgacacctt 3360 tigcccctgt tgatggtcct cctgttgata tcttgcctaa caaggaattc atgctatatg 3420 gacgatctgc taatagtccc ccatatggag ggcctgctaa tgatccacca tatggaagac 3480 ctgccattga tccaccatat ggaagaccaa tatccacaat atggaagacc tgccaatgat 3540 ccaccatata gaagacctgt caatgataca tcatattgag ggttgaacaa tgatgggcct 3600 cgtgatcagg cccggtcctg aggggggtcg aatggggcga tcgctccggg ccccccgatt 3660 cccagggccc ccacctatct gtgcaacgag tagtagcgat cttccagcgc gcaacgtgag 3720 gcgatgtttc tccgtgattt cgccggcctg caactgcgag atcgcgagta taacgatcag 3780 ccgatcgatc tcatctgccg actgccatgc tgatgccaca cgcaagcgca gcatatcagc 3840 cttatcttgg ttgatcggca tgctggacga gcacatctgt tgtcgcatca actgctgact 3900 gctatatatg tgctggtgct gaatcgatcg attgtcgtca cggaagtgaa gaacaaccac 3960 ggcactgctg cctgctgggc tctagccgcc atcagctgcg gagctgatcc atggacgtga 4020 ggattaccga agactgtcag gtctcactgg gtatccaggt ggctctgtcg aattgtggat 4080 tccaaatagt taactggagt cigtcattgg tgttggtggt gtcaatctag ctgagatccg 4140 tctggtatag cgtaagagaa acatcatgca ctatccccag tcataaccat gccccaatgg 4200 ccaccaatag ttttcctcgt gaaaatctcc ccttgatccc agatctctgg tgcgagagtg 4260 aagttgcacg aagcccatcc tggttcttcc gagtccattg tggagatcca gggcattccg 4320 gatcaagtga aagccgcaca gagccttctg caaggcttca tcggcgcaag cagcaacagc 4380 aggcaggcgc cccagtcctc tcgcatggcc cattattttt agtaagctgg aggacattcg 4440 caacaggggg gicagiggic acigcaaagc igagiiigii ciicagiica acigcagaaa 4500 atigcagate ggitgeegta gitgetagaa eggiacatag itgecaecta acigtagega 4560 gtggcataac itattgtgtg tiactgccca atgttgtctc tccttgtgtt catggattca 4620

gacttgtgat tgtagtattt ctggatcaga ctggagtaaa agaaaaaaa aaaggaagac 4680 atgggtttaa cagtaaaaaa aaaaaaaaaa aaaaaaaaa aa 4722

<210> 74

<211> 6164

<212> DNA

<213> rice

<400> 74

cgcagaagag atcgatcgcg atctccctgc cccgacgtcg ccggccgatc tctcattctc 60 tecaegeest getegieges gaisticetae accatecetg ceatetests etteceetee 120 cctctatcct ccactggtgc cgcccacctc tccgtataag acaaactgcg ttgcggcgtt 180 cttcccgcgc tgttggcgcc cttcgctcgg acggctcgat ccaagggcga ggaggccgcg 300 cggggggcag tggcgccgag gacgcacgcc acgtgttcga cgaattgctc cgccgtggca 360 ggggcgcctc gatctacggc ttgaaccgcg ccctcgccga cgtcgcgcgt gacagccccg 420 cggccgccgt gtcccgctac aaccgcatgg cccgagccgg cgccgacgag gtaactcccg 480 actigigac ctacggcatt cicateggit getgetgeeg egegggeege tiggaceteg 540 gtitcgcggc ctigggcaat gtcattaaga agggatttag agtggacgcc atcgccttca 600 ciccictgct caagggccic igigccgaca agaggacgag cgacgcaatg gacatagtgc 660 tccgcagaat gaccgagctc ggctgcatac caaatgtctt ctcctacaat attcttctca 720 aggggctgtg tgatgagaac agaagccaag aagctctcga gctgctgcac atgatggctg 780 atgatcgagg aggaggtagc ccacctgatg tggtgtcgta taccactgtc atcaatggct 840 tcttcaaaga gggggattca gacaaagctt acagtacata ccatgaaatg ctggaccggg 900 ggattttacc tgatgttgtg acctacaact ctattattgc tgcgttatgc aaggctcaag 960 ctatggacaa agccatggag gtacttaaca ccatggttaa gaatggtgtc atgcctgatt 1020 gcatgacata taatagtatt cigcatggat attgctcttc agggcagccg aaagaggcta 1080 tiggatitci caaaaagaig cgcagigaig gigicgaacc agaigiigti actiatagci 1140 tgctcatgga ttatctttgc aagaacggaa gatgcatgga agctagaaag attttcgatt 1200 ctatgaccaa gaggggccta aagcctgaaa ttactaccta tggtaccctg cttcaggggt 1260

aigciaccaa aggagcccii giigagaigc aiggicicii ggaiiigaig giacgaaacg 1320 gtatccaccc tgatcattat gttttcagca ttctaatatg tgcatacgct aaacaaggga 1380 aagtagatca ggcaatgcit gtgttcagca aaatgaggca gcaaggattg aatccgaatg 1440 cagigacgia iggagcagii alaggcalac iligcaagic aggcagagia gaagaigcia 1500 tgctttattt tgagcagatg atcgatgaag gactaagccc tggcaacatt gtttataact 1560 ccctaattca tggtttgtgc acctgtaaca aatgggagag ggctgaagag ttaattcttg 1620 aaatgttgga tcgaggcatc tgtctgaaca ctattttctt taattcaata attgacagtc 1680 attgcaaaga agggagggtt atagaatctg aaaaactctt tgagctgatg gtacgtattg 1740 gtgtgaagcc caatgtcatt acctacaata ctcttatcaa tggatattgc ttggcaggta 1800 agatggatga agcaatgaag ttactttctg gcatggtctc agttgggttg aaacctaata 1860 ctgttactta tagcactttg attaatggct actgcaaaat tagtaggatg gaagacgcgt 1920 tagitctitt taaggagatg gagagcagig gigitagicc igatattatt acgiataaca 1980 taattetgea aggittatti caaaccagaa gaactgetge igeaaaagaa etetatgita 2040 ggattaccga aagtggaacg cagattgaac ttagcacata caacataatc cttcatggac 2100 tttgcaaaaa caaactcact gatgatgcac ttcagatgtt tcagaaccta tgtttgatgg 2160 attigaaget igaggetagg actiteaaca tiatgatiga igeatigeti aaagtiggea 2220 gaaatgatga agccaaggat itgtttgttg ctttctcgtc taacggttta gtgccgaatt 2280 attggacgta caggitgatg gcigaaaata itataggaca ggggitgcia gaagaatigg 2340 atcaactctt tctttcaatg gaggacaatg gctgtactgt tgactctggc atgctaaatt 2400 tcattgttag ggaactgttg cagagaggtg agataaccag ggctggcact tacctttcca 2460 tgattgatga gaagcactit tccctcgaag catccactgc ttccttgttt atagatcttt 2520 tgtctggggg aaaatatcaa gaatattata ggtttctccc tgaaaaatac aagtccttta 2580 tagaaicttt gagctgctga agcattttgc agctttgaaa ttctgtgttg gaattctttt 2640 ctcctacagt cctattagag gagggatctt ctctgtatgt gtaaatagcg aggtatgtat 2700 gccacctctc cgaattattt ttactgtggt tcctagactg taaacaagca attatgttat 2760 gctgttgatg ccagaaaaaa cataaaagtt tgtcgttatc tctactaacg gatcataaag 2820 ggattigiga ciggagitic aaacitaatg igiciaggca gtaattiiga cattagatcc 2880 aaaacaattt atagggtiic attaaattic atctatgtgt actgtttagg tgttgaatag 2940 ttigactigi ttittaacig aacaaaagai aigictgaag ctitgiicti taccaaaigc 3000

agtactgatc atcacaatat attititatg gaacaagatt ggattgtata gaatggttic 3060 tgatctgatt atcttatctc aacgtattat tatgcacatg tactaatcat gaaatatctg 3120 atggaatgat gittctaitt accigigiga ggcagcaagg agigagaigg ataacaccac 3180 atactccctc tgtcccagaa tataagaagt tttagagttg gacacgatta ttaagaaagt 3240 aggtagaagt gagtagtgga gggttgtgat tgcatgagta gtggaggtag gtgggaaaag 3300 tgaatggtgg agggttgtga ttggttggga agagaatgtt ggtagagaag ttgttatatt 3360 ttggggagta cattattatt ctagaacaat actgttgtgc tcaagaagcg ttccaaagat 3420 gtttcacaac ctgtgctcga tgggttttga gcttaatcct gggacattca gtatcatgat 3480 ctgtctcatt cttaaacatg gaataaagga tgacagcatg atttctttgt ctctataatc 3540 titiggetae ceacagataa tagetgiaaa tetataetae titaaaagga giagiggigg 3600 tggtgagtgg tgaatctgcc accaccccac caccaactct caaaattctg acatgtggga 3660 tcactgtcaa tcccttctcc aagacatgtg ggatcactgt caatcccttc tccaaaccaa 3720 tigiaigata gaacagigga aaicacggac agaccaigga gcicicaacc ataaicaicc 3780 tigcgagita ataacaaaig gagcgiaaac tiggcaagca aaaaacicaa aiiaaiicia 3840 aaattaaget etaggatica aaatagattt eetetetgea tigigetgii atgattitta 3900 attccgtaac aacgcaaatg cattttgcta gtcttataaa gaagggttaa tgcaaatatt 3960 ctgattaaat gattgtaict atgaagtttg aatgctagtg gaagctcctt tgaccatgtt 4020 tigitgigcg agcatitaag agagigaaga gaaigciici tiggigcigi iciggiaigg 4080 aaggatccac agataaaatt caggitctac igcitcicig ciigiaatti icaigaagci 4140 gcagtgaata ccttgttgac cacttgatct gttgctttga aggagaatat agtagtggcc 4200 aaggttggtg acggtgatgg tggcatgtga tcccccagat cticagtgac ccagagagga 4260 ggggacggcg cgtggtgagc tacaaggcat actcagtgga gggcaagatc aaggcctccc 4320 gtccgtaggg gactccgctg catcaaggcc aactgctccg aactgatcaa tttctggtgc 4380 agacaggigc tigcggicag gitaaagaag tiggcaaaaa tgcticigaa gaaaggitaa 4440 tigitgitic atcicaggag attccagaig atccagtgic tccaacaatt gaggcgctta 4500 ttttgctcca tagtaaagta agtacacttg ctgagaacca ccagttgaca acacggcttg 4560 tigiaccaic aaacaaagii ggiigiatic tiggggaagg iggaaaggia attactgaaa 4620 tgagaagacg gactggggct gaaatccgag tctactcaaa agcagataaa cctaagtacc 4680 tgtcttttga tgaggagctt gtgcaggttg ctgggcttcc agctattgaa agaggagccc 4740

tgacagagat igciicgagg ciitgaacta ggacacicag agatggaagt icticcaata 4800 atccgacacc ttttgcccct gttgatggtc ctcctgttga tatcttgcct aacaaggaat 4860 tcatgctata tggacgatct gctaatagtc ccccatatgg agggcctgct aatgatccac 4920 catatggaag acctgccatt gatccaccat atggaagacc aatatccaca atatggaaga 4980 cctgccaatg atccaccata tagaagacct gtcaatgata catcatattg agggttgaac 5040 aatgatgggc ctcgtgatca ggcccggtcc tgaggggggt cgaatggggc gatcgctccg 5100 ggccccccga ttcccagggc ccccacctat ctgtgcaacg agtagtagcg atcttccagc 5160 gcgcaacgtg aggcgatgtt tctccgtgat ttcgccggcc tgcaactgcg agatcgcgag 5220 tataacgatc agccgatcga tctcatctgc cgactgccat gctgatgcca cacgcaagcg 5280 cagcatatca gccttatctt ggttgatcgg catgctggac gagcacatct gttgtcgcat 5340 caactgctga ctgctatata tgtgctggtg ctgaatcgat cgattgtcgt cacggaagtg 5400 aagaacaacc acggcactgc tgcctgctgg gctctagccg ccatcagctg cggagctgat 5460 ccatggacgt gaggattacc gaagactgtc aggtctcact gggtatccag gtggctctgt 5520 cgaatigigg aticcaaata gitaacigga gicigicaii ggigiiggig gigicaaici 5580 agctgagatc cgtctggtat agcgtaagag aaacatcatg cactatcccc agtcataacc 5640 atgccccaat ggccaccaat agtiticcic gigaaaatci cccctigatc ccagatcict 5700 ggtgcgagag tgaagttgca cgaagcccat cctggttctt ccgagtccat tgtggagatc 5760 cagggcattc cggatcaagt gaaagccgca cagagccttc tgcaaggctt catcggcgca 5820 agcagcaaca gcaggcaggc gccccagtcc tctcgcatgg cccattattt ttagtaagct 5880 ggaggacatt cgcaacaggg gggtcagtgg tcactgcaaa gctgagtttg ttcttcagtt 5940 caactgcaga aaattgcaga tcggttgccg tagttgctag aacggtacat agttgccacc 6000 taactgtagc gagtggcata acttattgtg tgttactgcc caatgttgtc tctccttgtg 6060 ttcatggatt cagacttgtg attgtagtat ttctggatca gactggagta aaagaaaaaa 6120 6164

```
⟨210⟩ 75
```

<sup>&</sup>lt;211> 791

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> rice

<400> Met Ala Arg Arg Ala Ala Ser Arg Ala Val Gly Ala Leu Arg Ser Asp Gly Ser lle Gln Gly Arg Gly Gly Arg Ala Gly Gly Ser Gly . 25 Ala Glu Asp Ala Arg His Val Phe Asp Glu Leu Leu Arg Arg Gly Arg Gly Ala Ser Ile Tyr Gly Leu Asn Arg Ala Leu Ala Asp Val Ala Arg Asp Ser Pro Ala Ala Ala Val Ser Arg Tyr Asn Arg Met Ala Arg Ala Gly Ala Asp Glu Val Thr Pro Asp Leu Cys Thr Tyr Gly Ile Leu Ile Gly Cys Cys Cys Arg Ala Gly Arg Leu Asp Leu Gly Phe Ala Ala Leu Gly Asn Val Ile Lys Lys Gly Phe Arg Val Asp Ala Ile Ala Phe Thr Pro Leu Leu Lys Gly Leu Cys Ala Asp Lys Arg Thr Ser Asp Ala Met Asp Ile Val Leu Arg Arg Met Thr Glu Leu Gly Cys Ile Pro Asn Val Phe Ser Tyr Asn Ile Leu Leu Lys Gly Leu Cys Asp Glu Asn Arg Ser Gln Glu Ala Leu Glu Leu Leu His Met Met Ala Asp Asp Arg Gly Gly Ser Pro Pro Asp Val Val Ser Tyr Thr Thr Val Ile Asn Gly Phe Phe Lys Glu Gly 

Asp	Ser	Asp	Lys	Ala	Tyr	Ser	Thr	Tyr	His	Glu	Met	Leu	Asp	Arg
				215					220					225
Gly	Ile	Leu	Pro	Asp	Val	Val	Thr	Tyr	Asn	Ser	lle	Ile	Ala	Ala
				230					235					240
Leu	Cys	Lys	Ala	Gln	Ala	Met	Asp	Lys	Ala	Met	Glu	Val	Leu	Asn
				245					250					255
Thr	Met	Val	Lys	Asn	Gly	Val	Met	Pro	Asp	Cys	Met	Thr	Tyr	Asn
•	•			260					265					270
Ser	Ile	Leu	His	Gly	Tyr	Cys	Ser	Ser	Gly	Gln	Pro	Lys	Glu	Ala
				275					280					285
Ile	Gly	Phe	Leu	Lys	Lys	Met	Arg	Ser	Asp	Gly	Val	Glu	Pro	Asp
				290					295					300
Val	Val	Thr	Tyr	Ser	Leu	Leu	Met	Asp	Tyr	Leu	Cys	Lys	Asn	Gly
				305					310		`			315
Arg	Cys	Met	Glu	Ala	Arg	Lys	Ile	Phe	Asp	Ser	Met	Thr	Lys	Arg
				320					325					330
Gly	Leu	Lys	Pro	Glu	Ile	Thr	Thr	Tyr	Gly	Thr	Leu	Leu	Gln	
				335					340			٠		345
Туr	Ala	Thr	Lys	Gly	Ala	Leu	Val	Glu		His	Gly	Leu	Leu	
				350					355					360
Leu	Met	Val	Arg		Gly	Ile	His	Pro			Tyr	Val	Phe	
				365					370				0.1	375
Ile	Leu	Ile	e Cys	Ala	Tyr	Ala	Lys	Gln			Val	Asp	GIn	Ala
				380					385		_		_	390
Met	Leu	ı Val	Phe	e Ser	Lys	Met	Arg	Gln			Leu	Asn	Pro	
				395					400					405
Ala	Val	Thi	r Tyı	Gly	Ala	Val	Ile	Gly			ı Cys	Lys	Ser	Gly
				410					415					420
Arg	Val	Gli	u Asp	o Ala	Met	Leu	Tyr	Phe	Glu	Glr	Met	Ile	Asp	Glu

			425					430					435
Gly Leu	Ser	Pro	Gly	Asn	Ile	Val	Tyr	Asn	Ser	Leu	lle	His	Gly
			440					445					450
Leu Cys	Thr	Cys	Asn	Lys	Trp	Glu	Arg	Ala	Glu	Glu	Leu	Ile	Leu
			455					460					465
Glu Met	Leu	Asp	Arg	Gly	Ile	Cys	Leu	Asn	Thr	Ile	Phe	Phe	Asn
			470					475					480
Ser Ile	Ile	Asp	Ser	His	Cys	Lys	Glu	Gly	Arg	Val	Ile	Glu	Ser
			485					490					495
Glu Lys	Leu	Phe	Glu	Leu	Met	Val	Arg	Ile	Gly	Val	Lys	Pro	Asn
			500					505					510
Val Ile	Thr	Tyr	Asn	Thr	Leu	Ile	Asn	Gly	Tyr	Cys	Leu	Ala	Gly
			515					520					525
Lys Met	Asp	Glu		Met	Lys	Leu	Leu		Gly	Met	Val	Ser	
			530					535					540
Gly Leu	Lys	Pro		Thr	Val	Thr	Tyr		Thr	Leu	lle	Asn	
<b></b>	-		545			<b>.</b>		550			-	<b>D.</b>	555
Tyr Cys	Lys	He		Arg	Met	Glu	Asp		Leu	Vai	Leu	Phe	
Clas Mad	C1	C	560	C1	W - 1	C	D a	565	Tla	11.	Th	т	570
Glu Met	GIU	261		GIY	vaı	ser	Pro		116	116	ınr	lyr	Asn
Ilo Ilo	Ι	Cln	575	Ι	Dha	Cla	Th =	580	A = ~	Th =	110	41 n	585
Ile Ile	rea	GIII	590	reu	rne	GIII	1111	595	Alg	1111	Ala	Ala	600
Lys Glu	Ι Δ11	Tur		Λέσ	Ila	Th r	Clu		Clv	Thr	Cln	ΙΙο	
Lys Giu	Leu	1 y 1	605	MIR		1111	Glu	610	Gly	1111	6111	116	615
Iou Sor	<b>ፐ</b> ኬ 🕶	Т., -		110	Ilo	T ou	шіс		Ι	C22.0	T 71.0	Aon	
Leu Ser	1111	1 ) 1	620	116	116	ren	1112		ren	Cys	r A 2	usli	
Iou Th-	٨٥٣	٨٥٥		Lou	C1=	Mod	Dha	625	Aoni	Lon	Cx- 2	I 0.11	630
Leu Thr	ASP	ASD		reu	GIII	мет	rne		ASII	ren	Cys	ren	
			635					640					645

```
Asp Leu Lys Leu Glu Ala Arg Thr Phe Asn Ile Met Ile Asp Ala
                 650
                                      655
                                                           660
Leu Leu Lys Val Gly Arg Asn Asp Glu Ala Lys Asp Leu Phe Val
                 665
                                      670
                                                           675
Ala Phe Ser Ser Asn Gly Leu Val Pro Asn Tyr Trp Thr Tyr Arg
                 680
                                      685
                                                           690
Leu Met Ala Glu Asn Ile Ile Gly Gln Gly Leu Leu Glu Glu Leu
                 695
                                      700
                                                           705
Asp Gln Leu Phe Leu Ser Met Glu Asp Asn Gly Cys Thr Val Asp
                 710
                                      715
                                                           720
Ser Gly Met Leu Asn Phe Ile Val Arg Glu Leu Leu Gln Arg Gly
                 725
                                      730
                                                           735
Glu Ile Thr Arg Ala Gly Thr Tyr Leu Ser Met Ile Asp Glu Lys
                 740
                                      745
                                                           750
His Phe Ser Leu Glu Ala Ser Thr Ala Ser Leu Phe Ile Asp Leu
                 755
                                      760
                                                          765
Leu Ser Gly Gly Lys Tyr Gln Glu Tyr Tyr Arg Phe Leu Pro Glu
                 770
                                      775
                                                          780
Lys Tyr Lys Ser Phe Ile Glu Ser Leu Ser Cys
                 785
                                      790 791
```

<210> 76

<211> 24

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification

<400> 76

tctcattctc tccacgccct gctc 24

```
<210>
       77
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       77
acggcggagc aattcgtcga acac
                             24
<210>
       78
<211>
       24
<212>
       DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       78
agtgtgtggc atggtgcatt tccg
                             24
<210>
       79
<211> 24
<212> DNA
<213>
       artificial sequence
<220>
<223>
       Oligonucleotide primer for amplification
<400>
       79
ctctacagga tacacggtgt aagg
                            24
```

<210>

80

<211> 4746 <212> DNA <213> rice <400> 80

gccgcgcaga agagatcgat cgcgatctcc ctgccccgac gtcgccggcc gatctctcat 60 tctctccacg ccctgctcgt cgccgatctc ctacaccatc cctgccatct cctccttccc 120 ctcccctcta tcctccactg gtgccgccca cctctccgta taagacaaac tgcgttgcgg 180 cgttggtttc cgccggcgct gctgctgcac ctgtcagcta gggcgggcat ggcgcgccgc 240 gccgcttccc gcgctgttgg cgcccttcgc tcggacggct cgatccaagg gcgaggaggc 300 cgcgcgggg gcagtggcgc cgaggacgca cgccacgtgt tcgacgaatt gctccgccgt 360 ggcaggggcg cctcgatcta cggcttgaac cgcgccctcg ccgacgtcgc gcgtgacagc 420 cccgcggccg ccgtgtcccg ctacaaccgc atggcccgag ccggcgccga cgaggtaact 480 cccgactigt gcacctacgg cattctcatc ggttgctgct gccgcgcggg ccgcttggac 540 ctcggtttcg cggccttggg caatgtcatt aagaagggat ttagagtgga cgccatcgcc 600 ttcactcctc tgctcaaggg cctctgtgcc gacaagagga cgagcgacgc aatggacata 660 gtgctccgca gaatgaccga gctcggctgc ataccaaatg tcttctccta caatattctt 720 ctcaaggggc tgtgtgatga gaacagaagc caagaagctc tcgagctgct gcacatgatg 780 gctgatgatc gaggaggagg tagcccacct gatgtggtgt cgtataccac tgtcatcaat 840 ggcttcttca aagaggggga ttcagacaaa gcttacagta cataccatga aatgctggac 900 cgggggattt tacctgatgt tgtgacctac aactctatta ttgctgcgtt atgcaaggct 960 caagctatgg acaaagccat ggaggtactt aacaccatgg ttaagaatgg tgtcatgcct 1020 gatigcatga catataatag tattctgcat ggatatigct cttcagggca gccgaaagag 1080 gctattggat ttctcaaaaa gatgcgcagt gatggtgtcg aaccagatgt tgttacttat 1140 agcitgcica iggattaici iigcaagaac ggaagaigca iggaagciag aaagattiic 1200 gattctatga ccaagagggg cctaaagcct gaaattacta cctatggtac cctgcttcag 1260 gggtatgcta ccaaaggagc ccttgttgag atgcatggtc tcttggattt gatggtacga 1320 aacggtatcc accetgatca ttatgttttc agcattctaa tatgtgcata egetaaacaa 1380 gggaaagtag atcaggcaat gcttgtgttc agcaaaatga ggcagcaagg attgaatccg 1440 aatgcagtga cgtatggagc agttataggc atactttgca agtcaggcag agtagaagat 1500

gctatgcttt attttgagca gatgatcgat gaaggactaa gccctggcaa cattgtttat 1560 aactccctaa ttcatggttt gtgcacctgt aacaaatggg agagggctga agagttaatt 1620 cttgaaatgi tggatcgagg catctgtctg aacactattt tctttaattc aataattgac 1680 agicatigca aagaagggag ggttatagaa tcigaaaaac tcitigagct gatggtacgt 1740 attggtgtga agcccaatgt cattacctac aatactctta tcaatggata ttgcttggca 1800 ggtaagatgg atgaagcaat gaagttactt totggcatgg totcagttgg gttgaaacct 1860 aatactgtta cttatagcac tttgattaat ggctactgca aaattagtag gatggaagac 1920 gcgttagttc tttttaagga gatggagagc agtggtgtta gtcctgatat tattacgtat 1980 aacataatto tgcaaggiti atticaaaco agaagaacig cigcigcaaa agaacictat 2040 gttaggatta ccgaaagtgg aacgcagatt gaacttagca catacaacat aatccttcat 2100 ggactitgca aaaacaaact cacigatgat gcacticaga tgtttcagaa cctatgtttg 2160 atggatttga agcitgaggc taggactttc aacattatga ttgatgcatt gcttaaagtt 2220 ggcagaaatg atgaagccaa ggatttgttt gttgctttct cgtctaacgg tttagtgccg 2280 aattattgga cgtacaggtt gatggctgaa aatattatag gacaggggtt gctagaagaa 2340 ttggatcaac tctttctttc aatggaggac aatggctgta ctgttgactc tggcatgcta 2400 aatttcattg ttagggaact gttgcagaga ggtgagataa ccagggctgg cacttacctt 2460 tccatgattg atgagaagca cttttccctc gaagcatcca ctgcttcctt gtttatagat 2520 cttttgtctg ggggaaaata tcaagaatat tataggtttc tccctgaaaa atacaagtcc 2580 tttatagaat citigagcig cigaagcati tigcagciit gaaattcigi giiggaattc 2640 ttttctccta cagtcctatt agaggagga tcttctctgt atgtgtaaat agcgagtttg 2700 aatgctagtg gaagctcctt tgaccatgtt ttgttgtgcg agcatttaag agagtgaaga 2760 gaatgettet tiggigetgi teiggiatgg aaggateeae agataaaati eagtagigge 2820 caaggtiggt gacggigatg giggcatgig atcccccaga tcttcagiga cccagagagg 2880 aggggacggc gcgtggtgag ctacaaggca tactcagtgg agggcaagat caaggcctcc 2940 cgtccgtagg ggactccgct gcatcaaggc caactgctcc gaactgatca atttctggtg 3000 cagacaggtg cttgcggtca ggttaaagaa gttggcaaaa atgcttctga agaaaggtta 3060 atigtigiti catcicagga gattccagat gatccagtgt ciccaacaat tgaggcgctt 3120 attttgctcc atagtaaagt aagtacactt gctgagaacc accagttgac aacacggctt 3180 gtigtaccat caaacaaagt tggttgtatt cttggggaag gtggaaaggt aattactgaa 3240

atgagaagac ggactggggc tgaaatccga gtctactcaa aagcagataa acctaagtac 3300 ctgictittg atgaggaget igtgeaggit getgggette cagetattga aagaggagee 3360 ctgacagaga ttgcttcgag gctttgaact aggacactca gagatggaag ttcttccaat 3420 aatccgacac cttttgcccc tgttgatggt cctcctgttg atatcttgcc taacaaggaa 3480 ticatgciat atggacgate tgctaatagt eccecatatg gagggeetge taatgateea 3540 ccatatggaa gacctgccat tgatccacca tatggaagac caatatccac aatatggaag 3600 accigccaai gaiccaccai alagaagacc igicaaigai acaicaiaii gagggiigaa 3660 caatgatggg cctcgtgatc aggcccggtc ctgagggggg tcgaatgggg cgatcgctcc 3720 gggccccccg attcccaggg cccccaccta tctgtgcaac gagtagtagc gatcttccag 3780 cgcgcaacgt gaggcgatgt ttctccgtga tttcgccggc ctgcaactgc gagatcgcga 3840 gtataacgat cagccgatcg atctcatctg ccgactgcca tgctgatgcc acacgcaagc 3900 gcagcatatc agccttatct tggttgatcg gcatgctgga cgagcacatc tgttgtcgca 3960 tcaactgctg actgctatat atgtgctggt gctgaatcga tcgattgtcg tcacggaagt 4020 gaagaacaac cacggcactg ctgcctgctg ggctctagcc gccatcagct gcggagctga 4080 tccatggacg tgaggattac cgaagactgt caggtctcac tgggtatcca ggtggctctg 4140 tcgaattgtg gattccaaat agttaactgg agtctgtcat tggtgttggt ggtgtcaatc 4200 tagctgagat ccgtctggta tagcgtaaga gaaacatcat gcactatccc cagtcataac 4260 catgccccaa tggccaccaa tagttttcct cgtgaaaatc tccccttgat cccagatctc 4320 tggtgcgaga gtgaagttgc acgaagccca tcctggttct tccgagtcca ttgtggagat 4380 ccagggcatt ccggatcaag tgaaagccgc acagagcctt ctgcaaggct tcatcggcgc 4440 aagcagcaac agcaggcagg cgccccagtc ctctcgcatg gcccattatt tttagtaagc 4500 tggaggacat tcgcaacagg ggggtcagtg gtcactgcaa agctgagttt gttcttcagt 4560 tcaactgcag aaaattgcag atcggttgcc gtagttgcta gaacggtaca tagttgccac 4620 ctaactgtag cgagtggcat aacttattgt gtgttactgc ccaatgttgt ctctccttgt 4680 gticatggat tcagactigt gattgtagta ittctggatc agactggagt aaaagaaaaa 4740 aaaaaa 4746

<210> 81

<211> 4779

<212> DNA <213> rice <400> 81

tctcattctc tccacgccct gctcgtcgcc gatctcctac accatccctg ccatctcctc 60 cttcccctcc cctctatcct ccactggtgc cgcccacctc tccgtataag acaaactgcg 120 ttgcggcgtt ggtttccgcc ggcgctgctg ctgcacctgt cagctagggc gggcatggcg 180 cgccgcgccg cttcccgcgc tgttggcgcc cttcgctcgg acggctcgat ccaagggcga 240 ggaggccgcg cggggggcag tggcgccgag gacgcacgcc acgtgttcga cgaattgctc 300 cgccgtggca ggggcgcctc gatctacggc ttgaaccgcg ccctcgccga cgtcgcgct 360 gacageceeg eggeegeegt gteeegetae aacegeatgg eeegageegg egeegaegag 420 gtaactcccg actigigcac ctacggcatt ctcatcggtt gctgctgccg cgcgggccgc 480 tiggaccicg giticgcggc ciigggcaat gicaltaaga agggalitag agiggacgcc 540 ategeetica etectetget caagggeete tgtgeegaca agaggaegag egaegeaatg 600 gacatagige teegeagaat gacegagete ggetgeatae caaatgiett eteetacaat 660 attottotoa aggggotgig tgatgagaac agaagccaag aagctotoga gotgotgcac 720 atgatggctg atgatcgagg aggaggtagc ccacctgatg tggtgtcgta taccactgtc 780 atcaatggct tcttcaaaga gggggattca gacaaagctt acagtacata ccatgaaatg 840 ctggaccggg ggattttacc tgatgttgtg acctacaact ctattattgc tgcgttatgc 900 aaggeteaag etatggacaa ageeatggag gtaettaaca eeatggttaa gaatggtgte 960 atgcctgatt gcatgacata taatagtatt ctgcatggat attgctcttc agggcagccg 1020 aaagaggcta ttggatttct caaaaagatg cgcagtgatg gtgtcgaacc agatgttgtt 1080 acttataget tgeteatgga ttatettige aagaaeggaa gatgeatgga agetagaaag 1140 attitegati etaigaceaa gaggggeeta aageetgaaa ttaetaeeta iggiaeeetg 1200 cttcaggggt atgctaccaa aggagccctt gttgagatgc atggtctctt ggatttgatg 1260 gtacgaaacg gtatccaccc tgatcattat gttttcagca ttctaatatg tgcatacgct 1320 aaacaaggga aagtagatca ggcaatgctt gtgttcagca aaatgaggca gcaaggattg 1380 aatccgaatg cagtgacgta tggagcagtt ataggcatac tttgcaagtc aggcagagta 1440 gaagatgcta tgctttattt tgagcagatg atcgatgaag gactaagccc tggcaacatt 1500 gtitataact ccctaatica iggtiigtgc acctgtaaca aatgggagag ggctgaagag 1560

ttaattettg aaatgitgga tegaggeate tgietgaaca etaittiett taatteaata 1620 attgacagic attgcaaaga agggagggit atagaatcig aaaaacictt tgagcigatg 1680 gtacgtattg gtgtgaagcc caatgtcatt acctacaata ctcttatcaa tggatattgc 1740 tiggcaggia agaiggaiga agcaaigaag itaciticig gcaiggicic agiigggiig 1800 aaacctaata ctgttactta tagcactitg attaatggct actgcaaaat tagtaggatg 1860 gaagacgcgt tagttctttt taaggagatg gagagcagtg gtgttagtcc tgatattatt 1920 acgtataaca taattctgca aggtttattt caaaccagaa gaactgctgc tgcaaaagaa 1980 ctctatgita ggattaccga aagtggaacg cagattgaac ttagcacata caacataatc 2040 cticatggac titgcaaaaa caaactcact gatgatgcac ticagatgti tcagaaccta 2100 tgtttgatgg atttgaagct tgaggctagg actttcaaca ttatgattga tgcattgctt 2160 aaagtiggca gaaatgatga agccaaggat tigitigiig ciiicicgic taacggiita 2220 gtgccgaatt attggacgta caggttgatg gctgaaaata ttataggaca ggggttgcta 2280 gaagaattgg atcaactctt tctttcaatg gaggacaatg gctgtactgt tgactctggc 2340 atgctaaatt tcattgttag ggaactgttg cagagaggtg agataaccag ggctggcact 2400 tacctttcca tgattgatga gaagcacttt tccctcgaag catccactgc ttccttgttt 2460 atagatetti igtetggggg aaaatateaa gaatattata ggttteteee tgaaaaatae 2520 aagteettta tagaatettt gagetgeiga ageatttige agettigaaa lietgigtig 2580 gaattettt eteetacagt eetattagag gagggatett etetgtatgt gtaaatageg 2640 agittgaatg ctagiggaag ciccitigac catgittigi igigcgagca titaagagag 2700 tgaagagaat gcttctttgg tgctgttctg gtatggaagg atccacagat aaaattcagg 2760 agaatatagt agtggccaag gttggtgacg gtgatggtgg catgtgatcc cccagatctt 2820 cagigaccca gagaggaggg gacggcgcgi ggigagciac aaggcalact cagiggaggg 2880 caagatcaag gcctcccgtc cgtaggggac tccgctgcat caaggccaac tgctccgaac 2940 tgatcaattt ciggigcaga caggigciig cggicaggit aaagaagiig gcaaaaaigc 3000 ticigaagaa aggitaatig tigiticaic tcaggagati ccagaigatc cagigicicc 3060 aacaattgag gcgcttattt tgctccatag taaagtaagt acacttgctg agaaccacca 3120 gttgacaaca cggcttgttg taccatcaaa caaagttggt tgtattcttg gggaaggtgg 3180 aaaggtaatt actgaaaiga gaagacggac tggggctgaa atccgagtct actcaaaagc 3240 agataaacct aagtacctgt cttttgatga ggagcttgtg caggttgctg ggcttccagc 3300

tattgaaaga ggagccctga cagagattgc ttcgaggctt tgaactagga cactcagaga 3360 tggaagttct tccaataatc cgacaccttt tgcccctgtt gatggtcctc ctgttgatat 3420 cttgcctaac aaggaattca tgctatatgg acgatctgct aatagtcccc catatggagg 3480 gcctgctaat gatccaccat atggaagacc tgccattgat ccaccatatg gaagaccaat 3540 atccacaata tggaagacct gccaatgatc caccatatag aagacctgtc aatgatacat 3600 catattgagg gttgaacaat gatgggcctc gtgatcaggc ccggtcctga ggggggtcga 3660 atggggcgat cgctccgggc cccccgattc ccagggcccc cacctatctg tgcaacgagt 3720 agtagcgatc ttccagcgcg caacgtgagg cgatgtttct ccgtgatttc gccggcctgc 3780 aactgcgaga tcgcgagtat aacgatcagc cgatcgatct catctgccga ctgccatgct 3840 gatgccacac gcaagcgcag catatcagcc ttatcttggt tgatcggcat gctggacgag 3900 cacatctgtt gtcgcatcaa ctgctgactg ctatatatgt gctggtgctg aatcgatcga 3960 tigicgicae ggaagigaag aacaaccaeg geacigeige eigeigget eiageegeea 4020 tcagctgcgg agctgatcca tggacgtgag gattaccgaa gactgtcagg tctcactggg 4080 tatccaggtg gctctgtcga attgtggatt ccaaatagtt aactggagtc tgtcattggt 4140 gttggtggtg tcaatctagc tgagatccgt ctggtatagc gtaagagaaa catcatgcac 4200 tatccccagt cataaccatg ccccaatggc caccaatagt titcctcgtg aaaatctccc 4260 ctigatecca gatetetggt gegagagtga agttgeacga ageceatect ggttetteeg 4320 agtocattgt ggagatocag ggcattocgg atcaagtgaa agcogcacag agcottotgc 4380 aaggetteat eggegeaage ageaacagea ggeaggegee eeagteetet egeatggeee 4440 ' attattttta gtaagctgga ggacattcgc aacagggggg tcagtggtca ctgcaaagct 4500 gagttigtto ticagticaa cigcagaaaa tigcagaicg giigccgiag iigciagaac 4560 ggtacatagt tgccacctaa ctgtagcgag tggcataact tattgtgtgt tactgcccaa 4620 tgttgtctct ccttgtgttc atggattcag acttgtgatt gtagtatttc tggatcagac 4680 tggagtaaaa gaaaaaaaa aaggaagaca tgggtttaac agtaaaaaaa aaaaaaaaa 4740 4779 

<210> 82

<211> 6158

<212> DNA

<213> rice

82

<400>

cgcgcagaag agatcgatcg cgatctccct gccccgacgt cgccggccga tctctcattc 60 totocacgoe etgetegteg ecgatetect acaccatece tgccatetee teetteecet 120 cccctctatc ctccactggt gccgcccacc tctccgtata agacaaactg cgttgcggcg 180 tiggtiiccg ccggcgctgc tgctgcacci gtcagctagg gcgggcatgg cgcgccgcgc 240 cgcttcccgc gctgttggcg cccttcgctc ggacggctcg atccaagggc gaggaggccg 300 cgcgggggc agtggcgccg aggacgcacg ccacgtgttc gacgaattgc tccgccgtgg 360 caggggcgcc tcgatctacg gcttgaaccg cgccctcgcc gacgtcgcgc gtgacagccc 420 cgcggccgcc gtgtcccgct acaaccgcat ggcccgagcc ggcgccgacg aggtaactcc 480 cgactigige acctaeggea tieteategg tigetgetge egegeggee getiggaeet 540 cggtttcgcg gccttgggca atgtcattaa gaagggattt agagtggacg ccatcgcctt 600 cactcctctg ctcaagggcc tctgtgccga caagaggacg agcgacgcaa tggacatagt 660 gctccgcaga atgaccgagc tcggctgcat accaaatgtc ttctcctaca atattcttct 720 caaggggctg tgtgatgaga acagaagcca agaagctctc gagctgctgc acatgatggc 780 tgatgatcga ggaggaggta gcccacctga tgtggtgtcg tataccactg tcatcaatgg 840 cttcttcaaa gagggggatt cagacaaagc ttacagtaca taccatgaaa tgctggaccg 900 ggggattita ccigatgitg igacciacaa ciciattati gcigcgitai gcaaggcica 960 agctatggac aaagccatgg aggtacttaa caccatggtt aagaatggtg tcatgcctga 1020 ttgcatgaca tataatagta ttctgcatgg atattgctct tcagggcagc cgaaagaggc 1080 tattggattt ctcaaaaaga tgcgcagtga tggtgtcgaa ccagatgttg ttacttatag 1140 cttgctcatg gattatcttt gcaagaacgg aagatgcatg gaagctagaa agattttcga 1200 ttctatgacc aagaggggcc taaagcctga aattactacc tatggtaccc tgcttcaggg 1260 gtatgctacc aaaggagccc ttgttgagat gcatggtctc ttggatttga tggtacgaaa 1320 cggtatccac cctgatcatt atgititcag cattctaata tgtgcatacg ctaaacaagg 1380 gaaagtagat caggcaatgc tigigitcag caaaatgagg cagcaaggat tgaatccgaa 1440 tgcagtgacg tatggagcag ttataggcat actttgcaag tcaggcagag tagaagatgc 1500 tatgctttat tttgagcaga tgatcgatga aggactaagc cctggcaaca ttgtttataa 1560 ctccctaatt catggttigt gcacctgtaa caaatgggag agggctgaag agttaattct 1620

tgaaatgttg gatcgaggca tctgtctgaa cactattttc tttaattcaa taattgacag 1680 tcattgcaaa gaagggaggg ttatagaatc tgaaaaactc tttgagctga tggtacgtat 1740 tggtgtgaag cccaatgtca ttacctacaa tactcttatc aatggatatt gcttggcagg 1800 taagatggat gaagcaatga agttactttc tggcatggtc tcagttgggt tgaaacctaa 1860 tactgttact tatagcactt tgattaatgg ctactgcaaa attagtagga tggaagacgc 1920 gttagttctt tttaaggaga tggagagcag tggtgttagt cctgatatta ttacgtataa 1980 cataattctg caaggittat itcaaaccag aagaactgct gctgcaaaag aacictatgi 2040 taggattacc gaaagtggaa cgcagattga acttagcaca tacaacataa tccttcatgg 2100 actitgcaaa aacaaactca cigatgaigc acticagaig titcagaacc taigitigat 2160 ggatttgaag cttgaggcta ggactttcaa cattatgatt gatgcattgc ttaaagttgg 2220 cagaaatgat gaagccaagg attigtitgt igciticicg ictaacggit tagigccgaa 2280 ttattggacg tacaggitga iggcigaaaa tattatagga caggggitgc tagaagaati 2340 ggatcaactc tttctttcaa tggaggacaa tggctgtact gttgactctg gcatgctaaa 2400 tttcattgtt agggaactgt tgcagagagg tgagataacc agggctggca cttacctttc 2460 catgattgat gagaagcact tttccctcga agcatccact gcttccttgt ttatagatct 2520 tttgtctggg ggaaaatatc aagaatatta taggtttctc cctgaaaaat acaagtcctt 2580 tatagaatci itgagcigci gaagcattii gcagciitga aattcigigi iggaaticii 2640 ttctcctaca gtcctattag aggaggatc ttctctgtat gtgtaaatag cgaggtatgt 2700 atgccacctc tccgaattat ttttactgtg gttcctagac tgtaaacaag caattatgtt 2760 atgctgttga tgccagaaaa aacataaaag tttgtcgtta tctctactaa cggatcataa 2820 agggatttgt gactggagtt tcaaacttaa tgtgtctagg cagtaatttt gacattagat 2880 ccaaaacaat ttatagggtt tcattaaatt tcatctatgt gtactgttta ggtgttgaat 2940 agittgacti gittittaac igaacaaaag atatgiciga agcittgiic ittaccaaat 3000 gcagtaciga icaicacaai atattitta iggaacaaga iiggatigia tagaaiggii 3060 tetgatetga itaiettaie teaaegtatt attatgeaea igtaetaate atgaaatate 3120 tgatggaatg atgittciai ttacctgtgt gaggcagcaa ggagtgagat ggataacacc 3180 acatactccc tctgtcccag aatataagaa gttttagagt tggacacgat tattaagaaa 3240 gtaggtagaa gigagtagig gagggiigig atigcaigag tagiggaggi aggigggaaa 3300 agigaaiggi ggagggiigi gaiiggiigg gaagagaaig iiggiagaga agiigiiata 3360

ttttggggag tacattatta ttctagaaca atactgttgt gctcaagaag cgttccaaag 3420 atgiticaca accigigate gaigggiitt gagetiaate eigggaeati cagiateaig 3480 atcigicica ticitaaaca iggaataaag gaigacagca igatticiti giciciataa 3540 tcttttggct acccacagat aatagctgta aatctatact actttaaaag gagtagtggt 3600 ggtggtgagt ggtgaatctg ccaccaccc accaccaact ctcaaaattc tgacatgtgg 3660 gatcactgtc aatcccttct ccaagacatg tgggatcact gtcaatccct tctccaaacc 3720 aattgtatga tagaacagig gaaatcacgg acagaccatg gagctctcaa ccataatcat 3780 ccttgcgagt taataacaaa tggagcgtaa acttggcaag caaaaaaactc aaattaattc 3840 taaaattaag cictaggatt caaaatagat ticctctctg cattgtgctg ttatgatttt 3900 taatteegta acaacgeaaa tgeattttge tagtettata aagaagggtt aatgeaaata 3960 ttctgattaa atgattgtat ctatgaagtt tgaatgctag tggaagctcc tttgaccatg 4020 ttttgttgtg cgagcattta agagagtgaa gagaatgctt ctttggtgct gttctggtat 4080 ggaaggatcc acagataaaa ttcaggagaa tatagtagtg gccaaggttg gtgacggtga 4140 tggtggcatg tgatccccca gatcttcagt gacccagaga ggaggggacg gcgcgtggtg 4200 agctacaagg catactcagt ggagggcaag atcaaggcct cccgtccgta ggggactccg 4260 ctgcatcaag gccaactgct ccgaactgat caatttctgg tgcagacagg tgcttgcggt 4320 caggitaaag aagitggcaa aaatgcitci gaagaaaggi taatigiigi ticalcicag 4380 gagaticcag atgatccagt giciccaaca attgaggcgc ttattttgct ccatagtaaa 4440 gtaagtacac tigcigagaa ccaccagtig acaacacggc tigtigtacc atcaaacaaa 4500 gtiggtigta tictigggga aggiggaaag gtaattacig aaatgagaag acggactggg 4560 gctgaaatcc gagtctactc aaaagcagat aaacctaagt acctgtcttt tgatgaggag 4620 cttgtgcagg ttgctgggct tccagctatt gaaagaggag ccctgacaga gattgcttcg 4680 aggettigaa etaggacaet eagagatgga agttetteea ataateegae acettitgee 4740 cctgttgatg gtcctcctgt tgatatcttg cctaacaagg aattcatgct atatggacga 4800 tctgctaata gtcccccata tggagggcct gctaatgatc caccatatgg aagacctgcc 4860 attgatccac catatggaag accaatatcc acaatatgga agacctgcca atgatccacc 4920 atatagaaga cctgtcaatg atacatcata ttgagggttg aacaatgatg ggcctcgtga 4980 tcaggcccgg tcctgagggg ggtcgaatgg ggcgatcgct ccgggccccc cgattcccag 5040 ggcccccacc tatctgtgca acgagtagta gcgatcttcc agcgcgcaac gtgaggcgat 5100

gtttctccgt gatttcgccg gcctgcaact gcgagatcgc gagtataacg atcagccgat 5160 cgatctcatc tgccgactgc catgctgatg ccacacgcaa gcgcagcata tcagccttat 5220 cttggttgat cggcatgctg gacgagcaca tctgttgtcg catcaactgc tgactgctat 5280 atatgigcig gigcigaatc gaicgatigi cgicacggaa gigaagaaca accacggcac 5340 tgctgcctgc tgggctctag ccgccatcag ctgcggagct gatccatgga cgtgaggatt 5400 accgaagact gtcaggtctc actgggtatc caggtggctc tgtcgaattg tggattccaa 5460 atagttaacc ggagtctgtc attggtgttg gtggtgtcaa tctagctgag atccgtctgg 5520 tatagogtaa gagaaacato atgoactato occagioata accatgocoo aatggocaco 5580 aatagttttc ctcgtgaaaa tctccccttg atcccagatc tctggtgcga gagtgaagtt 5640 gcacgaagcc catcctggtt cttccgagtc cattgtggag atccagggca ttccggatca 5700 agigaaagcc gcacagagcc tictgcaagg citcatcggc gcaagcagca acagcaggca 5760 ggcgccccag tcctctcgca tggcccatta tttttagtaa gctggaggac attcgcaaca 5820 ggggggtcag tggtcactgc aaagctgagt ttgttcttca gttcaactgc agaaaattgc 5880 agateggttg cegtagttge tagaaeggta catagttgee acetaaetgt agegagtgge 5940 ataacttatt gigigitaci geecaaigit gieietetet gigiteaigg atteagaett 6000 gigatigiag taiticigga icagacigga giaaaagaaa aaaaaaaagg aagacaiggg 6060 6158

<210> 83

<211> 2864

<212> DNA

<213> rice

<400> 83

aagagatcga tcgcgatct cctgccccga cgtcgccggc cgatctctca ttctctccac 60 gccctgctcg tcgccgatct cctacaccat ccctgccatc tcctccttcc cctccctct 120 atcctccact ggtgccgccc acctctccgt ataagacaaa ctgcgttgcg gcgttggttt 180 ccgccggcgc tgctgctgca cctgtcagct agggcgggca tggcgcgcc cgccgcttcc 240 cgcgctgttg gcgcccttcg ctcggacggc tcgatccaag ggcgaggagg ccgcggggg 300

ggcagtggcg ccgaggacgc acgccacgtg ttcgacgaat tgctccgccg tggcaggggc 360 gcctcgatct acggcttgaa ccgcgccctc gccgacgtcg cgcgtgacag ccccgcggcc 420 gccgigtccc gctacaaccg catggcccga gccggcgccg acgaggtaac tcccgacttg 480 tgcacctacg gcattctcat cggttgctgc tgccgcgcgg gccgcttgga cctcggtttc 540 gcggccttgg gcaatgtcat taagaaggga tttagagtgg acgccatcgc cttcactcct 600 ctgctcaagg gcctctgtgc cgacaagagg acgagcgacg caatggacat agtgctccgc 660 agaatgaccg agctcggctg cataccaaat gtcttctcct acaatattct tctcaagggg 720 ctgtgtgatg agaacagaag ccaagaagct ctcgagctgc tgcacatgat ggctgatgat 780 cgaggaggag gtagcccacc tgatgtggtg tcgtatacca ctgtcatcaa tggcttcttc 840 aaagagggg attcagacaa agcttacagt acataccatg aaatgctgga ccgggggatt 900 ttacctgatg tigigaccia caacictatt attgctgcgt tatgcaaggc tcaagctatg 960 gacaaagcca tggaggtact taacaccatg gttaagaatg gtgtcatgcc tgattgcatg 1020 acatataata gtattetgea tggatattge tetteaggge ageegaaaga ggetattgga 1080 tttctcaaaa agatgcgcag tgatggtgtc gaaccagatg ttgttactta tagcttgctc 1140 atggattatc tttgcaagaa cggaagatgc atggaagcta gaaagatttt cgattctatg 1200 accaagaggg gcctaaagcc tgaaattact acctatggta ccctgcttca ggggtatgct 1260 accaaaggag cccttgttga gatgcatggt ctcttggatt tgatggtacg aaacggtatc 1320 caccetgate attaigitti cagcatteta ataigigeat aegetaaaea agggaaagta 1380 gatcaggcaa tgcttgtgtt cagcaaaatg aggcagcaag gattgaatcc gaatgcagtg 1440 acgtatggag cagitatagg catacitigc aagicaggca gagtagaaga igctatgcit 1500 tattttgagc agatgatcga tgaaggacta agccctggca acattgttta taactcccta 1560 attcatggtt tgtgcacctg taacaaatgg gagagggctg aagagttaat tcttgaaatg 1620 tiggategag geateigiet gaacactati tiettiaati caataatiga eagteatige 1680 aaagaaggga gggttataga atcigaaaaa cicitigagc igaiggiacg taiiggigig 1740 aagcccaatg tcattaccta caatactctt atcaatggat attgcttggc aggtaagatg 1800 gatgaagcaa tgaagttact ttctggcatg gtctcagttg ggttgaaacc taatactgtt 1860 acttatagca ctttgattaa tggciactgc aaaattagta ggatggaaga cgcgttagtt 1920 ctitttaagg agatggagag cagtggtgtt agtcctgata ttattacgta taacataatt 1980 ctgcaaggtt tatticaaac cagaagaaci gctgcigcaa aagaacicta igtiaggatt 2040. accgaaagig gaacgcagat tgaactiagc acatacaaca taatccttca tggactitgc 2100
aaaaacaaac tcactgatga tgcacticag atgittcaga acctatgitt gatggatitg 2160
aagcttgagg ctaggactit caacattaig attgatgcat tgcttaaagt tggcagaaat 2220
gatgaagcca aggattigit tgitgctitc tcgictaacg gittagtgcc gaattattgg 2280
acgtacaggt tgatggctga aaatattata ggacaggggt tgctagaaga attggatcaa 2340
ctctttcttt caatggagga caatggctgt actgitgact ctggcatgct aaatticatt 2400
gttagggaac tgitgcagag aggtgagata accagggctg gcacttacct ttccatgatt 2460
gatgagaagc acttticcct cgaagcatcc actgcttcct tgittataga tctttigtct 2520
gggggaaaat atcaagaata ttataggitt ctccctgaaa aatacaagtc cttiatagaa 2580
tctttgagct gctgaagcat tttgcagctt tgaaattctg tgitggaatt cttticctt 2640
acagtcctat tagaggaggg atcttcttg tatgtgtaaa tagcgaggta tgitatgccac 2700
ctctccgaat tattittact gtggticcta gactgtaaac aagcaattat gtitatgctgt 2760
tgatgccaga gaticaaaa aaaaaaaaa aaaaaaaaa aaaa

<210> 84
<211> 2819
<212> DNA
<213> rice

<400> 84

ctcattctct ccacgccttg ctcgtcgccg atctcctaca ccatccttgc catctcctcc 60 ttcccctccc ctctatcctc cactggtgcc gcccacctct ccgtataaga caaactgcgt 120 tgcggcgttg gtttccgccg gcgctgctgc tgcacctgtc agctagggcg ggcatggcgc 180 gccgcgccgc ttcccgcgt gttggcgccc ttcgctcgga cggctcgatc caagggcgag 240 gaggccgcgc ggggggcagt ggcgccgagg acgcacgcca cgtgttcgac gaattgctcc 300 gccgtggcag gggcgctcg atctacggct tgaaccgcgc cctcgccgac gtcgcggtg 360 acagccccgc ggccgctgt tcccgctaca accgcatggc ccgagccggc gccgacgag 420 taactcccga cttgtgcacc tacggcattc tcatcggttg ctgctgcgc gcgggccgct 480 tggacctcgg tttcgcgcc ttgggcaatg tcattaagaa gggatttaga gtggacgcca 540

tcgccttcac tcctctgctc aagggcctct gtgccgacaa gaggacgagc gacgcaatgg 600 acatagtgct ccgcagaatg accgagctcg gctgcatacc aaatgtcttc tcctacaata 660 ttcttctcaa ggggctgtgt gatgagaaca gaagccaaga agctctcgag ctgctgcaca 720 tgatggctga tgatcgagga ggaggtagcc cacctgatgt ggtgtcgtat accactgtca 780 tcaatggctt cttcaaagag ggggattcag acaaagctta cagtacatac catgaaatgc 840 tggaccgggg gattttacct gatgttgtga cctacaactc tattattgct gcgttatgca 900 aggctcaagc tatggacaaa gccatggagg tacttaacac catggttaag aatggtgtca 960 tgcctgattg catgacatat aatagtattc tgcatggata ttgctcttca gggcagccga 1020 aagaggctat tggatttctc aaaaagatgc gcagtgatgg tgtcgaacca gatgttgtta 1080 cttatagett geteatggat tatetttgea agaaeggaag atgeatggaa getagaaaga 1140 ttttcgattc tatgaccaag aggggcctaa agcctgaaat tactacctat ggtaccctgc 1200 ttcaggggta tgctaccaaa ggagcccttg ttgagatgca tggtctcttg gatttgatgg 1260 tacgaaacgg tatccaccct gatcattatg tittcagcat tctaatatgt gcatacgcta 1320 aacaagggaa agtagatcag gcaatgcttg tgttcagcaa aatgaggcag caaggattga 1380 atccgaatgc agtgacgtat ggagcagtta taggcatact ttgcaagtca ggcagagtag 1440 aagatgctat gctttatttt gagcagatga tcgatgaagg actaagccct ggcaacattg 1500 tttataactc cctaattcat ggtttgtgca cctgtaacaa atgggagagg gctgaagagt 1560 taattetiga aatgitggat egaggeatet gietgaacae tattitetti aatteaataa 1620 ttgacagtca ttgcaaagaa gggagggtta tagaatctga aaaactcttt gagctgatgg 1680 tacgtatigg igigaagccc aaigtcatia cciacaatac icitatcaai ggatatigci 1740 tggcaggtaa gatggatgaa gcaatgaagt tactttctgg catggtctca gttgggttga 1800 aacctaatac igitactiat agcactiiga tiaaiggcia cigcaaaatt agiaggaigg 1860 aagacgcgtt agttettttt aaggagatgg agagcagtgg tgttagteet gatattatta 1920 cgtataacat aattctgcaa ggtttatttc aaaccagaag aactgctgct gcaaaagaac 1980 tctatgttag gattaccgaa agtggaacgc agattgaact tagcacatac aacataatcc 2040 ttcatggact ttgcaaaaac aaactcactg atgatgcact tcagatgttt cagaacctat 2100 gtttgatgga tttgaagctt gaggctagga ctttcaacat tatgattgat gcattgctta 2160 aagttggcag aaatgatgaa gccaaggatt tgtttgttgc tttctcgtct aacggtttag 2220 tgccgaatta ttggacgtac aggttgatgg ctgaaaatat tataggacag gggttgctag 2280

ين يلاد يا

<210> 85

<211> 2649

<212> DNA

<213> rice

<400> 85

ggigccgccc accidency ataagacaaa cigcgiigcg gcgiiggiii ccgccgcgc 60
tgcigcigca ccigicagci agggcggca iggcgcccc cgccgciicc cgcgctgiig 120
gcgcccticg cicgaccgc icgatcaag ggcgaggag ccgcgcggg ggcagtggcg 180
ccgaggacgc acgccacgig ticgacgaat igciccgccg iggcagggc gccicgaict 240
acggciigaa ccgcgcccic gccgacgicg cgcgigacag ccccgcggcc gccgtgiccc 300
gctacaaccg catggcccga gccggcgcg acgaggiaac icccgactig igcacciacg 360
gcaitcicai cggiigcig igccgcggg gccgciigga ccicggiit gcgccitgg 420
gcaatgicai taagaagga iitagagigg acgccaicgc citcactcci cigcicaagg 480
gccicigigc cgacaagagg acgacggc caaiggacai agigciccgc agaaigaccg 540
agaacagaag ccaagaagci cicgagcigc igcacaigai ggcigaigai cgaggaggag 660
giagcccacc igaigiggi icgiatacca cigicaicaa iggciiciic aaagaggggg 720
aticagacaa agciiacagi acaiaccaig aaaigcigga ccggggaii itaccigaig 780
tigtgaccia caaciciait aitgcigcgi iaigcaaggc icaagciaig gacaaagcca 840

tggaggtact taacaccatg gttaagaatg gtgtcatgcc tgattgcatg acatataata 900 gtattctgca tggatattgc tcttcagggc agccgaaaga ggctattgga tttctcaaaa 960 agatgcgcag tgatggtgtc gaaccagatg ttgttactta tagcttgctc atggattatc 1020 ttigcaagaa cggaagatgc atggaagcia gaaagattit cgattctatg accaagaggg 1080 gcctaaagcc tgaaattact acctatggta ccctgcttca ggggtatgct accaaaggag 1140 cccttgttga gatgcatggt ctcttggatt tgatggtacg aaacggtatc caccctgatc 1200 attatgtttt cagcattcta atatgtgcat acgctaaaca agggaaagta gatcaggcaa 1260 tgcttgtgtt cagcaaaatg aggcagcaag gattgaatcc gaatgcagtg acgtatggag 1320 cagttatagg catactttgc aagtcaggca gagtagaaga tgctatgctt tattttgagc 1380 agatgatcga tgaaggacta agccctggca acattgttta taactcccta attcatggtt 1440 tgtgcacctg taacaaatgg gagagggctg aagagttaat tcttgaaatg ttggatcgag 1500 gcatctgtct gaacactatt tictttaatt caataattga cagtcattgc aaagaaggga 1560 gggttataga atctgaaaaa ctctttgagc tgatggtacg tattggtgtg aagcccaatg 1620 tcattaccta caatactctt atcaatggat attgcttggc aggtaagatg gatgaagcaa 1680 tgaagttact ttctggcatg gtctcagttg ggttgaaacc taatactgtt acttatagca 1740 ctttgattaa tggctactgc aaaattagta ggatggaaga cgcgttagtt ctttttaagg 1800 agatggagag cagtggtgtt agtcctgata ttattacgta taacataatt ctgcaaggtt 1860 tatttcaaac cagaagaact gctgctgcaa aagaactcta tgttaggatt accgaaagtg 1920 gaacgcagat tgaacttagc acatacaaca taatccttca tggactttgc aaaaacaaac 1980 tcactgatga tgcacttcag atgittcaga acctatgitt gatggatttg aagcttgagg 2040 ctaggacttt caacattatg attgatgcat tgcttaaagt tggcagaaat gatgaagcca 2100 aggattigtt igtigctitc icgictaacg gittagigcc gaattatigg acgiacaggi 2160 tgatggctga aaatattata ggacaggggt tgctagaaga attggatcaa ctctttcttt 2220 caatggagga caatggctgt actgttgact ctggcatgct aaatttcatt gttagggaac 2280 tgttgcagag aggtgagata accagggctg gcacttacct ttccatgatt gatgagaagc 2340 actiticcci cgaagcaicc actgcticci igittataga tcititgici gggggaaaat 2400 atcaagaata ttataggttt ctccctgaaa aatacaagtc ctttatagaa tctttgagct 2460 gctgaagcat tttgcagctt tgaaattctg tgttggaatt cttttctcct acagtcctat 2520 tagaggaggg atcttctctg tatgtgtaaa tagcgaggta tgtatgccac ctctccgaat 2580

tattttact giggivecta gactgtaaac aagcaattat gitatgetgt tgatgecaga 2640 aaaaaaaaa

<210> 86

<211> 24

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification

<400> 86

cagttgggtt gaaacctaat actg 24

<210> 87

<211> 24

<212> DNA

<213> artificial sequence

<220>

<223> Oligonucleotide primer for amplification

<400> 87

cactaaaccg ttagacgaga aagc 24